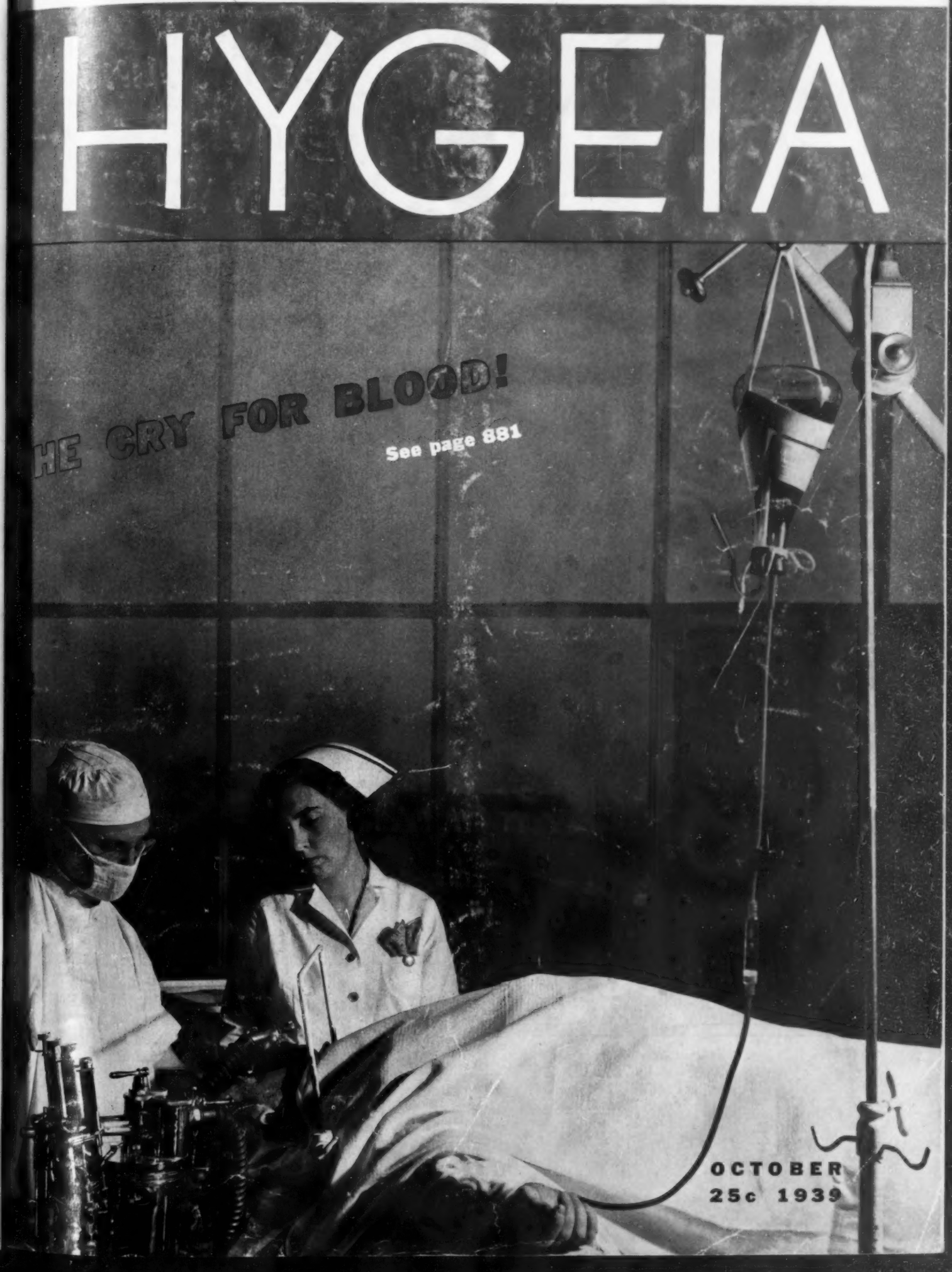
Medical Library

SEP 28 1939

THE HEALTH MAGAZINE

HYGEIA



OCTOBER
25c 1939

"WHEN SHOULD A YOUNG LADY HAVE HER FIRST VEGETABLES?"

Today many doctors are starting babies on **LIBBY'S BABY FOODS** *as early as six or eight weeks . . . they're extra easy to digest!*

Choose from these delicious varieties

3 Single Vegetables
Carrots Spinach Peas

3 Vegetable Combinations
No. 1 Peas, beets, asparagus
No. 2 Tomatoes, pumpkin, string beans
No. 3 Carrots, spinach, peas

A Cereal Combination
No. 4 Whole milk, whole wheat, soya flour

A Fruit Combination
No. 5 Prunes, pineapple juice, lemon juice

A Nutritious Soup
No. 6 Vegetables, chicken livers, barley

* An exclusive Libby process that completely breaks up cells, fibers and starch particles, and releases nutriment for easier digestion. U. S. Pat. No. 2037029.

Libby's

HOMOGENIZED*

BABY FOODS

Baby's First Vegetables and Fruits

Tested and Approved Good Housekeeping Bureau

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Council on Foods of the American Medical Association has accepted Libby's Baby Foods *as being suitable for use by infants as young as one or two months.*

How DIFFERENT from a few years ago!

Doctors know that babies do better when the milk diet is supplemented with vegetables and fruits early in life.

SPECIALLY PREPARED vegetables and fruits add minerals and vitamins to the diet which help babies grow big and strong.

Libby's Baby Foods are reliable sources of these nutrients. They are carefully prepared under conditions designed to retain minerals and vitamins to a high degree.

AND IN ADDITION, Libby uses an exclusive process to make Libby's Baby Foods extra easy to digest.

First they are strained through fine-meshed sieves—and then they are specially homogenized to make them extra smooth, extra fine in texture.

ASK YOUR DOCTOR when your baby can start on Libby's specially prepared foods!

COPR. 1939, LIBBY, McNEILL & LIBBY

New Booklet about Baby Feeding—FREE

LIBBY, McNEILL & LIBBY, Dept. H-10, Chicago

Please send me, without charge, beautiful new booklet, "Your Baby's First Vegetables and Fruits."

*Name*_____

*Address*_____

*City*_____ *State*_____

*Grocer's Name*_____

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

12

Copyright 1939, Mead Johnson & Company, Evansville, Indiana, U.S.A.

WHO'S WHO IN HYGEIA

Says GLENN YERK WILLIAMSON, "One's education should continue until death," and he bears this out by declaring that he frequently has to do extensive research on topics about which he writes (free lance). He reads very little fiction but has "digested" an enormous quantity of cold and flinty "fact" articles. He is 36, unmarried and lives in El Paso, Ill.

PAUL POPENOE, Sc.D., is the general director of the Institute of Family Relations of Los Angeles, which was established in 1930 to serve as an educational center in connection with problems of marriage, parenthood, sex and heredity. From 1911-13 he was an agricultural explorer, in which capacity he toured northern India, eastern Arabia and Iraq and went to North Africa twice. He then became editor of the *Journal of Heredity* at Washington, D. C., where he remained until drafted into the Army in 1917.

Dr. Popenoe is now lecturer in biology at the University of Southern California. He is married and the father of four sons.

GEORGE A. SKINNER, M.D., is a man of wide travels, experiences and interests. He entered the U. S. Army Medical Corps in 1896 and has seen 38 years of active service in all positions from first lieutenant up to colonel. Dr. Skinner spent eight years in the Philippines, where he fought cholera, malaria, mosquitoes and native bandits, and where he was host to the sultan and his many wives and doctor to the young royalty. Later, stationed in the Omaha area, he finished service with a seven year period as Corps Surgeon, retiring in 1934. Immediately thereon, he accepted the chair of Public Health at the University of Nebraska Medical College, in Omaha, where he stayed four years. His interests are photography, shop work—in which he favors wood and metal work—music for his pipe organ playing, and sketching.

HYGEIA

THE HEALTH MAGAZINE

Published and copyrighted, 1939, by the American Medical Association. Edited by Morris Fishbein, M.D.

CONTENTS FOR OCTOBER

COVER ..... Wallace Kirkland

MENDING NETS — A Poem ..... M. Phelps Johnston 870

TIME TO SAVE HEARING—An Editorial 871

WHO SHOULD NOT MARRY? ..... Paul Popenoe, Sc.D. 872

DOLLAR-A-MONTH DOCTOR ..... Lowell Lawrence 875

THE CRY FOR BLOOD ..... Noah Fabricant, M.D., and Leo M. Zimmerman, M.D. 881

HISTORY OF BLOOD TRANSFUSION ..... Robert Lewin 885

HERNIA ..... Geza de Takats, M.D. 886

HELPING YOUR CHILD GET WELL ..... Mary L. Poole 890

WHEN CANCER IS NOT GUILTY ..... Russell S. Ferguson, M.D. 893

CANCER — ITS SYMPTOMS AND DIAGNOSIS ..... Emil Novak, M.D. 896

DANGEROUS WATER! ..... G. A. Abbott 899

RIDING SHANKS' MARE ..... Glenn York Williamson 902

WONDER STORIES OF THE HUMAN MACHINE ..... George A. Skinner, M.D. 905

FIRE TRAP! ..... Robert Park MacHatton 909

FORECAST FOR NOVEMBER 913

TRADITIONAL EDUCATION ..... Marion Olive Lerrigo 914

FOODS AND NUTRITION

- Special Purpose Canned Foods 921
- Bananas ..... Harriet Morgan Fyler, Ph.D. 926

HEALTHGRAMS 925

QUESTIONS AND ANSWERS 932

BOOKS ON HEALTH 940

COMPILATION OF BOOKS ON HEALTH 944

POOR APPETITE AND CONSTIPATION ..... William I. Fishbein, M.D. 948

MEDICINE IN THE NEWS—Radio Announcement 952

TEACHING HEALTH

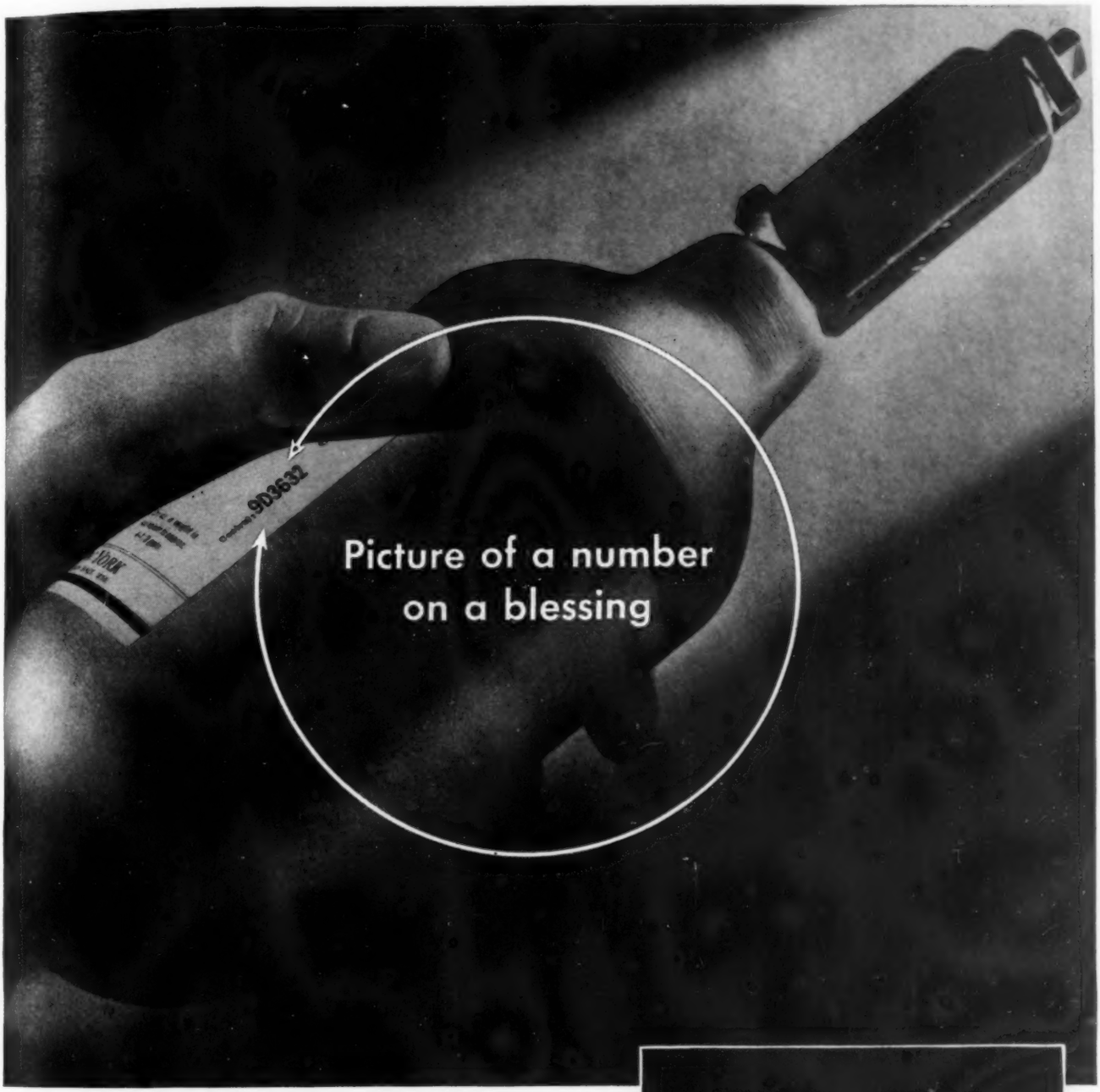
- On Optimism ..... J. Mace Andress, Ph.D. 953
- Creative Health Programs: II ..... Helen M. Smith, Effie G. Bathurst and Josephine Murray 954
- How to Use the Health Textbook ..... Jean V. Latimer 956

REASONING — A Poem ..... Marguerite Gode 958

MEDICAL NEWS OF THE MONTH 960

HYGEIA, The Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Single copies, 25 cents. Volume 17, Number 10. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.

All rights reserved



Within the memory of men now living, the slightest surgical operation was a terrible ordeal—before anesthesia. Today, under the trained hands and special technic of the modern anesthetist, a patient drifts off to blessed sleep almost as casually as in his own bed.

And just as the patient has complete faith in the skill of the anesthetist, so does the latter have complete confidence in the Squibb name and the Squibb control number on an anesthetic product.

There is a Squibb control number on the steel cylinder pictured above —9D3632. It identifies the particular unit of anesthetizing gas within the cylinder. The same number followed that anesthetic through every stage of manufacture. Under 9D3632, in the Squibb Laboratories, is filed a complete history of the product's making—analysis of raw materials used; description of tests made; which Squibb chemists made them; when; with what results.

Thus, the individual control number is actually an added guarantee to the doctor, by Squibb, that every detail of the product is right. You in your own home have this same guarantee on every Squibb product that you use. For there is an individual control number on everything made by Squibb, whether an anesthetic agent for the operating room or Squibb Mineral Oil, Milk of Magnesia, or Cod Liver Oil for your bathroom medicine cabinet.

THE PRICELESS INGREDIENT

OF EVERY PRODUCT IS THE HONOR

AND INTEGRITY OF ITS MAKER

E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

LETTERS FROM *Readers*

Regular Features

To the Editor:

I wish to take this opportunity of expressing my appreciation of the interesting and instructive articles on infants by Dr. William I. Fishbein in your recent issues.

I hope these will continue in your future publications.

MRS. L. MERRILL HENIKOFF
Chicago, Ill.

▲

Mysterious Epidemics

To the Editor:

I have been following Dr. Lillingston's excellent articles with keen interest. I should, however, like to take exception to some of his statements concerning Defoe's "A Journal of the Plague Year" that were contained in the May issue.

Dr. Lillingston seems to infer that Defoe's work is a good authority. When I was at the university and read this Journal, I was told to take it with a grain of salt. Defoe wrote it during the year of the Marseilles plague, in 1722, for the popular consumption, and although he does quote unimpeachable sources like the bills of mortality, most of the anecdotes are fictitious. The narrator is supposed to be a saddler in the East End, who talks colloquially and has a ring of truth about his words. Defoe, a journalist, knew the tricks of the trade and flavored these fictions with specific names and places. The crowning verisimilitude is attained by blandly asserting that he himself doubted these tales. And he includes a few genuine names, such as "the famous Solomon Eagle" who went about London with a pan of charcoal on his head to carry this effect further. Pepys' Diary will inform you that Eagle was a religious fanatic who appeared a year after the plague.

I should appreciate it very much if you would publish this letter to prevent misunderstanding about the Journal. I, for one, would not employ it as a source of medical history.

ALFRED A. KOSBERG
Schenectady, N. Y.

To the Editor:

Your correspondent is well informed in his criticism of Defoe as a medical historian. Yet I would not go as far as to reject Defoe altogether as a source of medical history. True, his information was second hand. Would he have written a better account had he been an eyewitness of all he described? May not the historian who was an infant in arms in the World War give a much truer account of it than the historian who wrote while the guns were still barking at each other? Would a doctor of medicine practicing in London during the plague, his mind prejudiced by the confused notions of epidemiology and pathology accepted as orthodox at that time, have proved a better historian?

To be sure, Defoe was a journalist who, as your correspondent remarks quite correctly if a trifle contemptuously, wrote the Journal for popular consumption and "knew the tricks of the trade." True enough. But I would prefer to express the same thought in kindlier terms—that Defoe knew his job and did it very well.

CLAUDE LILLINGSTON, M.D.
Bergen, Norway.

▲

Good Article on Teeth

To the Editor:

I am writing you in regard to the article "What the Mouth Can Tell," which was published in the July 1939 issue of HYGEIA.

I think this an unusual piece of literature, describing dentistry as a health service. The portrayal of infected teeth and gums and their relation to general health is clearly set forth in a very interesting manner and should be understandable to the lay mind.

Every dentist should avail himself of some reprints of this article if possible.

ARTHUR F. MUSGRAVE, D.D.S.
Kansas City, Mo.

▲

Fan-Fare

To the Editor:

I have been a HYGEIA fan for some time and have found the articles in your magazine to be the answer to many questions arising from time to time.

FRANCIS WOLFF
Gillette, Wyo.

To the Editor:

I am a monthly reader of your well published HYGEIA The Health Magazine. Being interested in science and health has made me fond of this magazine, so I have read it without fail for the past year and a half. The items, facts, questions and answers and truth that this magazine gives has made me believe in it. They say the best advertisement is the customer himself. If an article has satisfied him he will tell every one else about it, and that is the way I went about it.

SANDY TARALLO
Hyde Park, Mass.

To the Editor:

Have been a reader of the health magazine HYGEIA for the past year and like it better each time it comes. All the articles are of great interest and of much help. Young and old can equally enjoy the magazine. Some of the past articles were of special help to me. Thanks to HYGEIA.

MRS. LIBBY INEMAN
Chardon, Ohio.

▲

Reprints Available

To the Editor:

I have just read the article in HYGEIA August 1939, by Dr. Elmer L. Sevringhaus. This topic is so educational and broadminded that if possible I would like to purchase reprints.

NATHAN N. GINSBURG, M.D.
New Castle, Pa.

"Good-by, Mother"

"GOOD-BY, MOTHER, GOOD-BY, DAD"—and your son is off, leaving to take his first real job.

He will be absolutely on his own—away from the guiding influences of home and school. And you wish you could do more than give the vague admonition "Take care of yourself, son."

You can. You can give him a very practical suggestion.

Arm the boy with the name of a doctor in the city to which he is going; your family physician will be glad to help. Then point out the advantage of making intelligent use of the doctor's services.

If illness comes, your boy should have a doctor whom he can call without delay. For that is the best way to keep little illnesses "little." To illustrate, the lad who battles a cold-with-fever alone in a hall bedroom, has only youth on his side. There is always the chance that pneumonia or some other serious illness may develop. But the moment his doctor enters the sick room, the picture changes. Now your boy has an ally—and one with the resources of modern medical science at his command!

• • •

Urge your young folks to find a doctor promptly in the new world they have chosen to conquer, and to avail themselves of his knowledge, experience, and friendship whenever the need arises. He, perhaps, can be their greatest help in avoiding the ill-health and sicknesses that so frequently interfere with the hopes and ambitions of youth.

Copyright, 1938 Parke, Davis & Co.

SEE YOUR DOCTOR

Parke, Davis & Company • *Detroit, Michigan* • *The World's Largest Makers of Pharmaceutical and Biological Products*

Ewing Galloway

MENDING NETS

Before my beard was silver gray
I used to sail the seas,
For I was in the fishing fleet
And we had nets like these.

And after time had worked its way
I went to sea no more—
And oh, I thought my heart would break
From staying on the shore.

But I have learned that happiness
Is liking what one gets,
And I have learned it's not so bad
To sit here mending nets.

No more the salt spray in my face,
No more the whistling gale;
I'll serve the fishermen in peace
Until my last, long Sail.

—By M. Phelps Johnston

TIME to SAVE HEARING

NATIONAL Hearing Week is set this year for October 22 to 28. In many ways, loss of hearing shuts the deafened person off from his environment. No longer does he enjoy music, lectures, the voices of friends and business associates and the peculiar combinations of sound which make us aware that life goes on. Think of the desolate expression of the person who is hard of hearing alone in the midst of a crowd whose light laughter and exchange of repartee are completely lost to him.

Loss of hearing is often preventable by early attention to its causes. In many instances, adjustment is possible through the use of appropriate aids to hearing and the learning of lip reading. National Hearing Week calls attention to the possibilities for prevention of loss of hearing and amelioration of its effects. Every community, rural and urban, should demand hearing tests in the schools so that incipient cases of deafness may be discovered and treated promptly. The week is sponsored by the American Society for the Hard of Hearing, Washington, D. C., with participation of more than 175 local and regional societies for the hard of hearing. These organizations are composed of people who are hard of hearing and others who help solve their problems. Especially interested are the doctors who specialize in diseases of the ear, nose and throat. Bound together by ties of mutual interest, these members have made of the societies for the hard of hearing and of the American Society a powerful influence toward improving the lot of those whose hearing is threatened. They have helped put such persons in touch with competent medical care, assisted them in choosing the right kind of aid, protected them against quackery and encouraged them to face their problems with cheerfulness.

The person who is deprived of a functioning portion of the body, whether an eye, an ear or a leg, not only faces physical problems but also a psychologic crisis. Not only the disability or the injury must be faced, but also the adjustment in personality and in relationships with other persons. Because of its tendency to exclusion, loss of hearing creates special difficulties. The patient needs much sympathetic aid in making his adjustment. Often this is not forthcoming because the world is busy, careless and selfish. Special courtesy and consideration are demanded to make us turn aside and exert a special effort toward the inclusion of a deafened person in a general conversation.

In the Society for the Hard of Hearing or the lip-reading club, there is opportunity for persons with like handicaps to find a common meeting ground and to face their problems in cheerful company, rather than alone. National Hearing Week should be the occasion when deafened persons or their relatives will make or renew their contacts with the nearest Society for the Hard of Hearing. It should also be the time, in accordance with this year's slogan, "Time to Save Hearing," for persons who suffer from chronic inflammations in the nose and throat or children who have "running" ears or repeated earaches to look into the future and to procure medical attention which will help to postpone, if not entirely to prevent, the development of loss of hearing.

Who Should NOT Marry?

There are certain mental and physical characteristics which, when present, prevent happy marriages.* PAUL POPENOE *names these traits and explains their effects. Have you any?

MARRIAGE as an institution is invaluable in the promotion of physical and mental health; but it should not be thought of as a hospital or asylum, though in the past it has sometimes been so regarded. Parents of an "ailing" daughter would be advised by their friends to find a husband for her. "She'll be a different girl after she's married," they would say. Sometimes the difference was indeed striking: It brought her to a hospital. More often, perhaps, it was the husband who suffered!

The man might be given similar advice. Herbert Spencer, the philosopher, was a typical "old bachelor." His closest friend was the distinguished biologist and physician, Thomas H. Huxley, who used to counsel Spencer to marry as a remedy for his nervous ailments. "You should try gyneotherapy," he would laughingly prescribe. Spencer took the matter seriously but, like many another old bachelor, was unable to find any partner who possessed all the possible virtues of her sex. He wanted a wife who was intellectually superior, and so for a while he courted Miss Evans (the novelist "George Eliot"), who satisfied his requirements in that respect but not (so he confesses in his "Autobiography") in regard to beauty and feminine appeal. He therefore remained unmarried, and some woman was thereby spared the probably intolerable ordeal of being his wife.

Of course, some woman might have been willing thus to sacrifice herself unselfishly. Robert Browning married Elizabeth Barrett partly, it is supposed, because he felt that he could help bring vitality back to her life and release her from invalidism. His success was incomplete, but no one would doubt the happiness that both derived from this marriage. Fortunately, he had wealth and leisure to devote to the task.

One who wishes to dedicate his life in this way to another's welfare has a right to do so. But from the other side, no one has a right to demand that a partner make such sacrifices.

Hence today, when young people or their parents consult a physician or some other counselor about prospective marriage, the advice given will be based not merely on a study of the individual case but on consideration of the interests of all concerned, including present day society and posterity.

1. Some persons ought to refrain from marrying, because of their own physical condition.

Any serious disease, whether it affects heart, lungs, kidneys or any other part of the body, should be considered fairly. But the overwhelming majority of young people are physically fit for marriage. However, who shall decide in the individual case? Self diagnosis is as likely to be unsatisfactory here as in many other instances. Is the disease infectious and therefore certain to endanger the partner? Is it progressive and likely to leave the partner handicapped with the care of a chronic invalid or widowed prematurely with the responsibility of little children? Is the disease likely to incapacitate the subject for self support? Such questions must be answered in the light of expert knowledge.

Otosclerosis or progressive deafness, for instance, is a serious and widespread affliction. Usually it manifests itself in adolescence, if not in childhood, and with advancing years grows more and more pronounced until the individual may be forced to communicate with those around him by writing or he may learn how to read lips. A young man might think that his slightly impaired hearing was of no importance; but if it were of this type, destined to become worse and worse, the outlook would be serious. In a young woman it might be even more serious, because the condition is sometimes made worse with each pregnancy. Another young person with equally impaired

hearing might learn that his was not progressive, that it could even be improved. When so much is at stake, it is astonishing that so many young persons looking forward to marriage are still content to leap (and their parents also apparently still content to have them leap) blindly in the dark.

Go to your physician; lay your cards on the table, and discuss the possibilities. You are likely to be pleasantly surprised in learning from him that your situation is not so desperate as you feared; that with proper precautions you can marry with perfect safety. At least you'll know. Don't let either your own hopes or your own fears take the place of expert knowledge in such a matter. This whole problem is a highly technical one. So get technical help.

Don't wait with the idea that the state is going to require a physical examination of you before you marry and that that will take care of you. This premarital examination is highly desirable; it ought to be obligatory in every state. But in practice it merely ascertains that the subject is then free from acute infectious disease; of course it's well worth while to know that, and surely no one has a right to object to the ascertainment of that fact before the wedding. But the time of application for a marriage license is too late for a general consideration of health, inheritance and constitution in relation to marriage. Go before you become seriously interested in any prospective partner. It's a duty you owe to society and, first of all, to yourself.

These young persons are thinking that divorce will solve their problems. But divorce never solved any difficulty. They are simply running away from their problems.

2. Some persons ought to refrain from marriage because of their own mental condition. In practice, this offers a much greater problem than the one I have just been discussing. If a man has diabetes or tuberculosis, he probably knows it, takes it seriously and is willing to give it proper weight in deciding on marriage. But if he is merely neurotic, he is likely to adopt the typically neurotic attitude that "They're all out of step but me."

Worst of all, as I have pointed out, friends are still ready to advise marriage as a cure for all sorts of maladjustments and emotionally infantile conditions.

Miss N. was a spoiled child. Brought up without brothers or sisters, she had never learned to get along successfully with her equals; she had never acquired the instinctive give-and-take that comes from the everyday life of a normal family. She was always on the defensive, secretly afraid of men, and yet she definitely wished that she herself had been born a boy. "Never mind," the relatives assured each other cheerfully, "marriage will change all that. She'll get over it after she gets married."

Mr. M. had a severe inferiority complex. He was diffident, almost antisocial in company, blushing and stammering, getting away as quickly as possible. "Marriage will fix you, old boy," his associates comfortingly declared as they slapped him on the back.

Just why should marriage work a miracle in such cases? Marriage is not a form of psychotherapy: It is an adult partnership which makes heavy demands on both partners and which calls for the best possible mental hygiene. Whoever married Miss N. or Mr. M. would have to be a psychiatric nurse as well as a husband or wife. Such a role does not combine well with that of romantic lover. Much could be done through reeducation in mental hygiene to improve the personalities of Miss N. or Mr. M.; but this should be done before they walk to the altar, not afterward.

Marriage is so well adapted to human nature that it does often work wonders; but it deserves the best possible material to work on. Thousands of inadequate personalities are going into marriage each year who will inevitably come out through the divorce court. The vital statistics of divorcees tell the tale all too plainly: They are three or four times as likely to be committed for mental disease or for crime, three or four times as likely to commit suicide, as is a happily married person of the same age, and they haven't much more than half as great an expectation of life. They were sometimes of inferior material from the start.

To some extent, of course, these vital statistics also reflect the difficulties they encountered in trying to make an adjustment after divorce. They thought of divorce as a solution of their difficulties! But divorce is not a solution of any problem; it is simply running away from the problem. If the problem is inside you, as is so often the case, you merely take it along with you and meanwhile get into a lot of other difficulties that may be more serious than those you had encountered in marriage.

Many persons do make a successful adjustment to life after a divorce. If, however, they had taken as much trouble to make marriage a success, as they later have to take to make divorce a success, they would still be happily married.

Unless people know these things before they marry and are guided accordingly, they have no right to marry.

Those who have more serious handicaps will probably be aware of the fact and seek qualified assistance. One who has had a mental breakdown of any kind at any time should not think of marriage without expert advice. Such breakdowns often—though not always—indicate an inferior constitution.

During her last year in college, Miss R. had a depression which forced her to leave school without graduating. She was in a sanatorium for several months; then when she seemed to make a complete recovery, she went home. Four years afterward she was betrothed. "It's just the thing for her," the family congratulated themselves. They were all considerate enough not to mention the fact of this depression to her fiancé. A few months after marriage she committed suicide. One has a right to decide how much of "the past" one will reveal before marriage; but certainly as to physical and mental health there is no room for compromise. It is a crime not to be frank and honest in such a case.

Epilepsy offers a common problem, since there are several hundred thousand persons in the United States subject to it to a greater or less degree. The word doubtless covers a lot of different conditions, due to different causes; but in many instances the condition tends to become progressively worse.

Marriage in such a case may mean that the family is to be left without a breadwinner or with a heavy burden of invalidism. Offspring make the problem more acute. It is literally a terrible thing for children to have to grow up in the home with an epileptic parent. In general, persons with any tendency to epilepsy should not marry; but *(Continued on page 939)*

DOLLAR-A-MONTH DOCTOR

In most so-called bargains these days, closer scrutiny reveals a flaw in the fabric or inexpert workmanship on the seams. Heed the warning of* LOWELL LAWRANCE *and investigate "bargain medicine" carefully before you buy it

HAVE you talked to your family physician lately about current threats to medical practice and how the results of today's agitation for medicine controlled by the state may affect you?

Your doctor might tell you that our government soon may determine what kind of doctoring will be available for you and your family. That should be your vital, personal concern if you have or ever will have any ailment, from a cold in the head to a ruptured appendix.

Lead your own physician out of his shell of reserve and persuade him to tell you his views of the current conflict to decide whether the doctors or the politicians are going to control the care of the sick. He probably will tell you the quality of medical care is at stake.

By a vast propaganda, the word is being circulated now, faster than chain letters go, that a new day is just around the corner for the sick. Politicians have promised wage earners that soon they will be free from the danger of economic loss in illness or injury. The doctor bills will be paid by a benevolent Uncle Sam.

Under compulsory health insurance proposals in some states and a concept projected in the National Health Program, it is planned to regiment the doctors and pay their fees with state contributions, social security taxes and small deductions from the earners' wages. Some group medical care plans offer treatment of all diseases and performance of all required surgery for an assessment of a dollar a month, or some such fee.

The man in the street perks up attentive ears at the various proposals to provide complete medical care for a trivial payment. Naturally he is interested. He "knows a bargain" when he hears one.

We Americans are bargain hunters. Our determination to buy a 25 cent item for 17 or 21 cents developed cut-rate stores. But now we are bargain hunting in the field of the most highly personalized professional service.

Under some plan for group medical care or health insurance, Mr. Average American hopes to pay for little Johnny's tonsillectomy, Susie's appendectomy, Mother's next confinement and Grandpa's herniotomy for a cash outlay of a dollar or so a month—*far less than he spends on the upkeep of the family motor car.* That, of course, is a pleasant prospect! But it is drawing new lines of anxiety around the eyes of our family physician. He is wondering what quality of care he will be able to give when the state conscripts him into an army of "dollar-a-month doctors." He knows the most important point for emphasis in any change in our medical system is maintenance of the quality of service.

Public attention has been centered on health problems as never before. Our statesmen and our doctors alike realize that competent medical care must be available for every one at all

The alertness of my family doctor saved my little daughter when her thymus gland swelled. She had his expert and watchful attention at all times.

times. That is the ultimate goal, but how shall we achieve it?

To the left, as politics turn, we are offered state medicine. Its advocates urge adoption of a standardized medical care plan, modeled after European systems. Private practice of medicine would be abolished, at least for the physicians treating the lower income groups. Doctors would be organized under the control of state bureaus which might well dictate how and when they could treat their patients and what their remuneration would be.

On the other hand, the medical profession moves forward to meet the demands of our changing social order by developing methods of practice which would extend an equal quality of medical care to all classes, regardless of economic status. The doctors, themselves, are working to perfect plans for low cost group medical care for their patients in the lower income brackets. Under those plans, the doctors would maintain their professional independence, free from political domination, and there would be no disruption of the intimate, confidential relationship between doctor and patient.

The National Health Program, submitted by the President in January 1939 to the Congress, would make health insurance compulsory in this country and empower political appointees to dictate how the doctors could treat the insured. *This is one proposal above all others in the health program that organized medicine is determined to resist.*

The Doctor's Ethical Principles

Blasts of derogatory publicity have been fired at our doctors recently. Some federal agencies apparently are conducting a "smear" campaign against organized medicine. The disparaged doctors, adhering to ethical principles that advise against the public expression of individual opinions, have in general answered only through the pages of their own medical journals.

The politician, the lawyer, the business man, the debutante, the club woman, and—above all—the movie stars will permit themselves to be quoted in the public print on any and every conceivable subject. But not the doctor!

I am intensely interested in the quality of my doctoring. I insist on the best possible care when I am sick. During the last few years, on a newspaper man's salary, I have paid out enough money for medical and surgical services in my family to compare proportionately with the national debt. But I'm not kicking about that. My family doctor pulled me through last fall when I thought I was a "goner" with pneu-

monia. His alertness saved my baby when her thymus gland swelled after birth. She didn't "smother to death in her crib," as thousands of infants have done under less watchful attention. His surgical skill restored my wife to health. *I consider my doctor my best friend. No one else has done so much for me.*

Interested in these attacks on medicine as they pertain to him, I asked my family doctor his opinions. I wanted to know what the practicing physicians you and I call to our homes think about these proposals for drastic changes in the American medical system. For my own protection, I wanted to find any possible bugs under the chips in the various enticing proposals of bargains in medical care.

My physician not only told me his personal views on this subject; he took me to other physicians for their opinions, too. He and his colleagues opened for me all the data and documents compiled by their county medical society in a study of new trends in medicine. The story challenged me as a reporter. The most significant chapters in man's ancient and enduring quest for security are being written right now; yet comparatively few of us have had the opportunity to talk it out with our family doctor and find what the present furore over medical care is all about.

What is this "organized medicine" that now is beleagured in its bitterest fight, since it set out to supplant superstition with science?

Your family doctor will tell you medicine must be organized. Medical knowledge is too vast for any one man to master. Science is so swift in finding better ways to prevent and treat disease that no one man can keep pace with its progress. Medicine must be organized so the doctors may share both responsibility and knowledge. The profession as a whole is the great repository that holds, and from which the individual doctor of medicine draws, all the art and skill learned by the race to alleviate pain and cure disease since the days of Hippocrates.

The need of the doctors for a cooperative organization is so evident that out of the 169,628 licensed doctors of medicine in the United States, 113,113 were registered as members of county medical societies on May 1, 1939. They have grouped together to promote the science and art of medicine, consolidate the maximum medical skill of their respective communities into one cohesive unit and protect the public by requiring members of the societies to practice under the "Principles of Medical Ethics," the rules and regulations developed through the total experience of the profession.

Medicine must be organized so that physicians may share both responsibility and knowledge. Medical science is too vast for any one person to master.

Of all the organized activities of man, no group has higher educational qualifications than the doctors of medicine.

What are these ethics to which the doctors in the county medical societies subscribe? Are they a sinister screen, as the traducers of organized medicine have charged, behind which the doctors hide while lining their own pockets in a monopolistic control of the business of health and healing?

At a time when leaders of organized medicine are accused of selfish motives, it is interesting for a layman to read these ethical principles. It is immediately apparent that they have been developed partly for the protection of the doctors but more particularly for the protection of the doctors' patients.

In medicine, as in any other human activity, will be found a few undesirables. The profession as a whole has established its ethical principles to safeguard you and me and every other layman from the charlatan, the crook and the man with inferior education whose little knowledge can be a very dangerous thing.

The book "Principles of Medical Ethics" opens its first chapter with a statement that the practice of medicine is a profession which "has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration." It closes with an assertion that "these principles are primarily for the good of the public, and their enforcement should be conducted in such manner as shall deserve and receive the endorsement of the community."

Enforcement of these Principles of Ethics is an obligation to the public assumed by the county societies affiliated with the American Medical Association. The only disciplinary power they possess over doctors is the expulsion of offending members from the privileges of cooperative fellowship. Our doctors declare if they are deprived of that authority the American public would be at the mercy of every quack and medical crook and every "crack-pot" scheme to prey on the gullibility of the suffering.

The roots of organized medicine in America are embedded in 2,055 county and district medical societies, where they are watered and nourished by our own family doctor's devotion to the welfare of his patients.

Persons who urge changes without pause for thorough examination and study of effects condemn the American Medical Association for being ultra-conservative. Its mills do grind slowly and exceedingly fine, *but its cautious conservatism is a reflection of the emotional stability and common sense of the physician on whom you rely for vital advice.*

The American Medical Association is democratic in form and procedure. Its policies are

directed by the majority opinion in the component county societies. They elect in state meetings the members of the House of Delegates, which functions as the legislative branch of the national organization. That representative body elects the members of the Board of Trustees, the executive branch which appoints the executive officers and supervises the many activities of the American Medical Association.

Those activities include the weekly publication of *The Journal* of the American Medical Association and special journals, which disseminate knowledge of the latest discoveries in medicine that develop in the great research laboratories and among the doctors in the county societies. A library is maintained where all the written knowledge of medicine is available for members. Testing laboratories and various investigating councils function for service to the doctor and benefit to the public. A Council on Foods, for instance, safeguards the consumer by utilizing the influence and prestige of the American Medical Association for the establishment of truthful advertising of foods.

Perfection in medicine may never be realized. It may only be approached. But of all the organized activities of man, no group has higher educational qualifications than the doctors of medicine. On that point alone the ethical doctors bid for public support in their current fight to retain control of the care of the sick against the threatened encroachment of politicians, whose education may be deplorably limited.

The state long has recognized that only men well trained in the healing arts are qualified to treat the sick. Doctors are required to have certain schooling and pass examination by medical boards before they are licensed to practice medicine. The profession itself has set educational standards well above state requirements for doctors admitted to membership in medical societies.

One section of the Principles of Ethics states:

> Every physician should aid in safeguarding the profession against the admission to its ranks of those who are unfit or unqualified because deficient either in moral character or education.

The medical profession, through its national and state organizations, has applied that section of the principles by campaigning unceasingly to improve the curriculums of medical schools and to raise the standards of premedical training for all candidates for the degree of Doctor of Medicine.

Now, out of the seventy-seven medical schools in the United States, fifty-eight have adopted entrance requirements in excess of the mini-

A medical student must demonstrate exceptional aptitude in each step of his educational career before he is permitted to obtain a degree and a license to practice his profession.

mum required for the American Medical Association's grade A rating.

According to the 1937-38 report of the Council of Medical Education and Hospitals of the American Medical Association, 88 per cent of the students admitted to medical schools during 1937-38 had obtained either a college degree or four or more years of premedical training before matriculation.

Our young doctor of medicine today must study four years in an accredited high school, two, three or four years in a recognized college or university and four years in a class A medical school, demonstrating exceptional aptitude in each step of his educational career, before he is permitted to obtain a degree and a license to practice his profession.

In addition, the great majority of young doctors perfect their training through one or two years of internship in a recognized hospital before representing themselves to the public as qualified practitioners of medicine and surgery. Of the 5,946 doctors of medicine who graduated from medical schools in this country and Canada in 1937, 98.4 per cent, all except 94 students, received one or more years as an intern in a hospital approved by organized medicine. Significantly, the American Medical Association approved only 729 hospitals for training interns out of the 6,137 public hospitals that operated in the United States during 1938.

As a direct result of the increase in educational standards for doctors, for which organized medicine may be thanked, our expectancy of life at birth has increased during the last century from about 28 years to about 60 years. Our normal life span has been more than doubled. In our grandfather's day, out of every thousand babies born in this country, from 250 to 350 died before they were a year old. Today, out of every thousand, we lose only from 50 to 70 babies, and that mortality rate continues to decline.

Today, when efforts are being exerted to undermine public confidence in organized medicine, we should bear in mind that the medical profession not only is zealous of the educational qualifications of its members but also imposes high moral standards. Men of medicine, of course, are only human and may err as other men in wisdom and judgment. But taken as a class, the doctors who conform their lives to the Principles of Ethics have a superior moral stability.

Included in the set of principles is Hippocrates' own definition of those qualified to be a physician.

> He should be an upright man, instructed in the art of healing. Consequently, he must keep himself pure in character and conform to a high standard of morals, and must be diligent and conscientious in his studies. He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life.

Specifically stipulated in the principles are the duties of physicians to their patients. The doctor is admonished that "patience and delicacy should characterize all the acts of a physician. The confidences concerning individual or domestic life entrusted by a patient to a physician and the defects of disposition or flaws of character observed in the patient during medical attendance should be held as a trust and should never be revealed except when imperatively required by the laws of the state." Thus has the doctor become the secret and sympathetic father confessor to many a puzzled patient.

Over and over the principles reiterate the admonition to "serve the best interests of the patient." One section urges the doctor to "assure himself that the patient or his friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family." It also instructs the doctor that "he should always respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service."

Not only does the code prescribe strictly for a relationship of confidence between doctor and patient and for the honor of the individual physician, but it also promulgates rules for the application of physicians' duties to each other and to the profession at large.

Of utmost importance to you and me as doctor's patients is an article in the code which states:

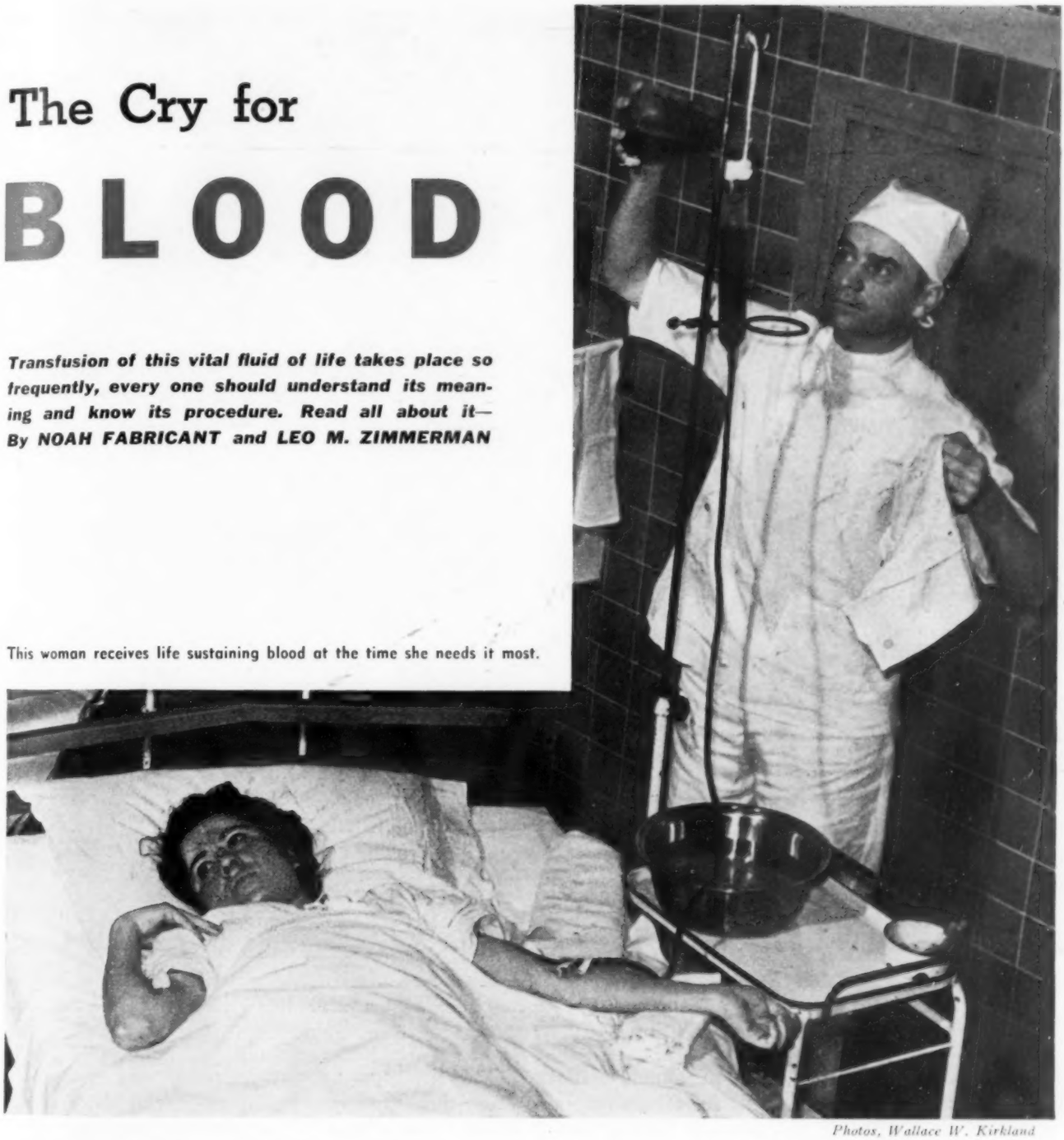
> In serious illness, especially in doubtful or difficult conditions, the physician should request consultations. In every consultation the benefit to be derived by the patient is of first importance. All the physicians interested in the case should be frank and candid with the patient and his family. There never is occasion for insincerity, rivalry or envy and these should never be permitted between consultants.

Provision is made in this comprehensive code for the occasions when "doctors disagree." One section stipulates "whenever there arises between physicians a grave difference of opinion which cannot be promptly adjusted, the dispute should be referred for arbitration to a committee of impartial physicians, preferably to the board of censors of a component county society of the American Medical Association."

Have you ever stopped to consider what the doctor's practice of con- *(Continued on page 918)*

The Cry for BLOOD

Transfusion of this vital fluid of life takes place so frequently, every one should understand its meaning and know its procedure. Read all about it—
By NOAH FABRICANT and LEO M. ZIMMERMAN



This woman receives life sustaining blood at the time she needs it most.

Photos, Wallace W. Kirkland

SOME few weeks ago a child was struck by a hit-and-run driver and brought into one of the larger Chicago hospitals with a badly crushed and profusely bleeding leg. The parents were notified, and the mother, when told that her child would receive a blood transfusion, became hysterical and repeatedly asked, "Can nothing else be done?" Her fears grew from the fact that as a layman she still regarded blood transfusion as a desperate last hope emergency measure.

Had this incident occurred in 1899 and not in 1939, her anxiety might have been justified. But even today the press treats blood transfusion as sensational copy, and where there is a cry for blood there is a front page story that causes the man in the street to shake his head in combined fear and dubious respect. Actually this procedure — the marriage of blood and life — is as routine and safe as is the extraction of a tooth.

While transfusion does enter into emergency treatments, it also applies itself to a range of more leisurely therapies. Thus, a surgeon contemplating operation on a debilitated patient suffering from anemia or low resistance is more than likely to give him a transfusion. In these circumstances a boost from a healthier source is often sufficient to tide the patient over the

Today, patients receiving a blood transfusion rarely suffer serious after-effects; the reason for this perfection is the care used in selecting a donor who has the same type blood as the intended recipient. Here a person is donating his blood.

critical period. And again, in shock — that mysterious depression of vital functions of the body which follows serious accidents or prolonged operations — transfusion is a godsend to patient and surgeon alike.

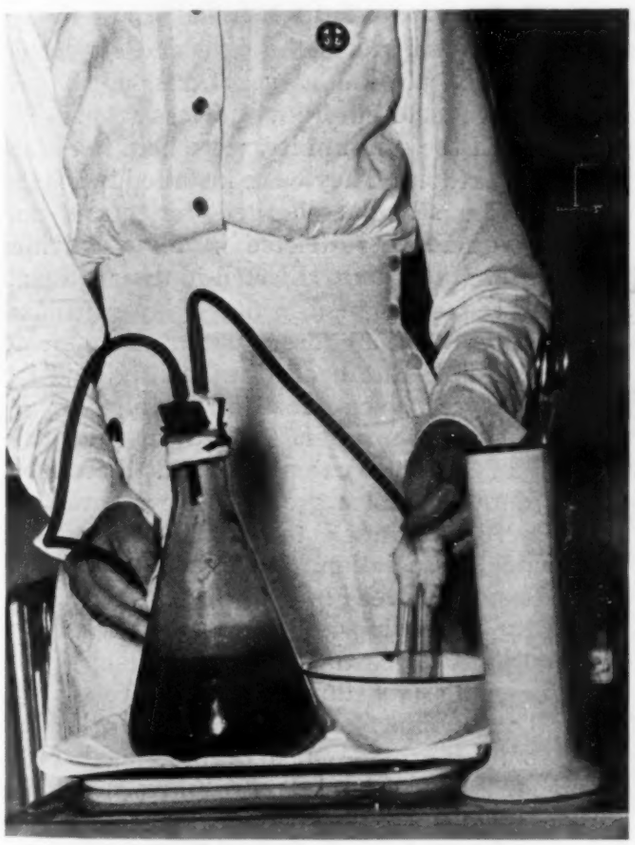
The idea of injecting blood directly into the individual who is blood starved has been capturing the fancies of people for thousands of years. But it was not until the discovery of blood circulation by Harvey in the early part of the seventeenth century that this process became feasible. Experimenters, electrified by the discovery, began injecting various substances, including blood, into the blood stream of animals, and it was soon learned that an animal, apparently dead from loss of blood, could be restored to life by the injection of blood taken from another animal.

The first human patient, however, was a 15 year old Parisian boy, weakened and near death from repeated bleedings then in vogue for the relief of obscure fevers. Jean Baptiste Denis, physician to Louis XIV, introduced lamb's blood directly in the youth's veins with immediate and beneficial results, and the patient recovered. In the wake of this astonishing cure, a wave of enthusiasm inundated the early investigators and led to the promiscuous transfusion of blood from animal to man.

The experiments were fraught with danger. Reactions were often severe enough to cause death, and the doctors became discouraged. The naïve and irrational selection of transfusion cases became all too frequent and the cures too few. A storm of opposition arose. Religion, metaphysics and personal animosity were

invoked in a bitter battle of polemics and defamation. In 1687 an edict of church and Parliament specifically prohibited animal-to-man transfusion.

This mandate acted as a damper on further research. Under its shadow, blood transfusion fell into disrepute for a period of 150 years, and except for a rare case report or two by a timorous researcher, the operation was relegated to a place among medical curiosities. Various writers lamented the fact but did nothing toward placing the procedure in a favorable light. In the meantime, science was coming to the fore. Anatomy and histology attained adult stature. Physiology and pathology grew rapidly. An experimental period was again in full swing.



After the blood is drawn from the donor, that which remains in the tube is taken off into a separate container and then tested for type.

The time was almost ripe for the rediscovery of blood transfusion. Appalled by his helplessness in the face of overwhelming hemorrhage during childbirth, an English obstetrician, James Blundell, attempted to replace the lost blood. "If I have any claim, however small," he wrote in 1834, "to rank among supporters of transfusion, it lies entirely in this: that undeterred by clamor or skepticism, I have made it my endeavor, again, to bring the operation into notice." Subjecting the question of blood transfusion to careful experimentation, Blundell succeeded not only in bringing the operation back into the limelight but also in placing it on a firm clinical basis, with rational indications and a scientific background of methods which are the basis for the technics employed today. He proved conclusively that animal blood was dangerous when injected into man and that only human blood was safe for human transfusion. In saving the lives of a number of women who would otherwise have died from hemorrhage during childbirth, Blundell focused the attention of the medical world on a heroic measure.

There were, however, still serious hazards to overcome. The development of infection both in the donor and the recipient became a complication. The solution to this problem lay in the epochal discoveries of Pasteur and Lister, who, in a study of cause and effect, established antisepsis and made surgery safe. But a number of questions still remained unanswered.

"Blood banks," the latest development, operate on the principle of having pretested stocks of refrigerated blood ready for emergency use.

Why did some patients flush, shiver and shake? Why did others run alarmingly high temperatures? Why did some turn pale and die?

No one had an adequate reply. No one could furnish a clue — until 1900, when an Austrian

scientist, Karl Landsteiner, a later Nobel prize winner, proved that not all human blood was alike. By showing the existence of several groups, he was able to offer a satisfactory explanation of the shivers, the shakes, the high temperatures and the deaths. Four such groups are now recognized, and it is possible to determine by simple and reliable tests into which group classification a person's blood falls. To transfuse blood of an individual of one group into an individual with blood of another group classification is to invite catastrophe and often death. But a person with blood of one group can almost invariably receive blood not only from a like group but also from the type known as "universal donor."

The International (Landsteiner) group classification recognizes four types: O, A, B and AB. "Universal donors" belong to O, because, as a rule, their blood is compatible with any one's. A great number of persons are identified with the A group. A smaller number — approximately one person in six — lie in the B group, and the uncommon group, AB, shows up only about once in thirty times.

The final difficulty to be overcome, that of developing simple and effective methods for performing transfusion, was purely technical. Every one knows that blood clots on contact with air. Neither clotted blood nor partially clotted blood can be safely injected into a patient. Many methods, therefore, have been devised for the safe transference of blood from one person to another. Most of these have enjoyed a limited and transient popularity, many suffering from their complexity. The simpler types in current use are most popular among doctors. Blood is drawn from the donor into large syringes and, before clotting has a chance to occur, immediately injected into the patient's vein. Other available devices consist of two or three-way syringes which pump blood from donor into recipient.

In 1914, experimental workers reported their research on the use of sodium citrate for prevention of clotting. This inexpensive chemical solution proved a happy thought, for it greatly simplified the operation. When added to blood, it has the same affinity for blood that soda has for Scotch, and it supplies one of the latest chapters in the story of blood transfusion.

Perhaps the next time you visit a busy hospital, interns and technicians will be grouping the blood of a patient's family and friends. The microscope checks the entire story: If the cross-matching tests done on the bloods of the prospective donors and patient reveal that the mixtures "clump" — the mass collection of red corpuscles instead of the normal moving and swimming about — a call goes out for compatible donors. In recent years agencies have been organized in an attempt to obtain syphilis-free donors, professional and volunteer, grouped beforehand and on call for emergency transfusion.

The pioneer commercial blood donor agencies, organized long ago, recruited prospective donors among persons looking for a little ready cash; these were found among hospital employees, interns, medical students, policemen, firemen and truck drivers. The average price for a pint of blood (500 cc.), an amount that can be given without deleterious effects, was $50. As the "get paid as you are bled" practice expanded by leaps and bounds, small fly-by-night agencies invaded the field and conducted a limited but profitable racket. Blood donors, frequently mustered from the less responsible elements of the community, were held in a state of quasi-serfdom. They were installed in shabby rooming houses, overcharged for meals and sleeping quarters, restricted in their activities and personal freedom, chiseled in their fees and all too frequently bled white by transfusions. Eventually the malodorous situation came to the attention of the health authorities, and the agencies were driven out of business.

Since many hospitals lacked an adequate supply of reliably examined and thoroughly tested donor blood, a group of New York doctors in 1929 founded the Blood Transfusion Betterment Association. This association, incorporated as a nonprofit making organization, was aided by a small grant from the Rockefeller Foundation. Since then municipal and voluntary hospitals, together with numerous individual physicians, in greater New York have become its patrons. Most of the members of the board of medical control are specialists either in blood diseases or in the practical aspects of transfusion. One of these is Dr. Karl Landsteiner.

Into the offices and clinic rooms of the blood donor bureau walk more than 2,000 salesmen of blood, hailing from every walk of life, students, professional men, unemployed and workers of all kinds. In the selection and examination of donors a high physical standard is enforced. A donor must be registered by the department of health, be of normal weight (at least 150 pounds), have a normal blood pressure and show a negative reaction to the Wassermann test. Not only must the tests for syphilis be repeated every three months, but within three weeks previous to each transfusion the donor must undergo a rigid *(Continued on page 936)*

HISTORY of BLOOD TRANSFUSION

by Robert Lewin

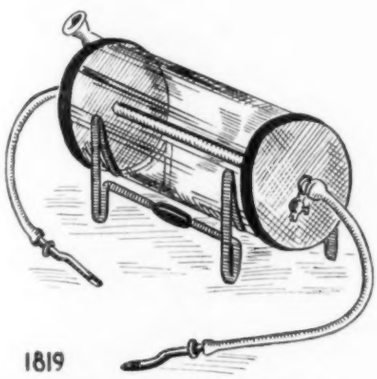
SENSING THE RECUPERATIVE AND RESUSCITATIVE VALUE OF BLOOD, THE EGYPTIANS, OF COURSE ERRONEOUSLY, TRIED TO GAIN IT'S BENEFITS BY BATHING IN IT.

LOWER - AN ENGLISH PHYSICAN - PERFORMED THE FIRST SUCCESSFUL TRANSFUSION OF BLOOD FROM ONE ANIMAL TO ANOTHER, IN 1665. HE UNITED THE ARTERY OF ONE DOG WITH THE VEIN OF ANOTHER BY QUILLS AND SILVER TUPES.

1646

THE FIRST ATTEMPT AT TRANSFUSION OF ANIMAL BLOOD WAS MADE BY **WREN**, AN ENGLISH ASTRONOMER. A BLADDER WAS USED AS A RECEPTACLE AND QUILLS AS CANNULAS OR TUBES.

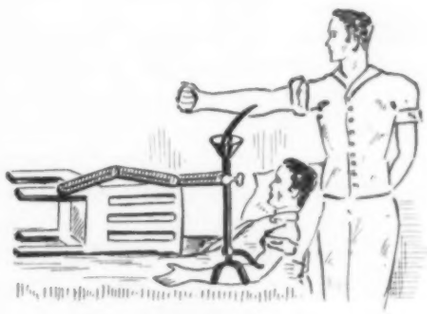
DENIS IN 1666 TRANSFUSED BLOOD FROM A LAMB TO A BOY, AND HIS RESULT WAS GOOD. BUT DENIS WAS NOT ALWAYS SO FORTUNATE, AND IN 1676 AN EDICT WAS PASSED IN PARIS PROHIBITING TRANSFUSION ON HUMAN BEINGS.



1819

GRAEFE, A GERMAN SURGEON, USED AN APPARATUS FOR DIRECT TRANSFUSION IN WHICH THE TUBE WAS BROUGHT THROUGH A GLASS CHAMBER CONTAINING HOT WATER TO PREVENT COAGULATION.

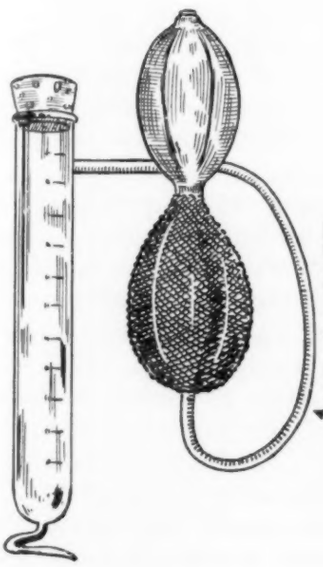
IN 1900 **LANDSTEINER** DISCOVERED THAT BLOOD CONTAINS SUBSTANCES THAT CAUSE OTHER RED CORPUSCLES TO FORM IN CLUMPS. **HEKTOEN** IN 1907 RECOGNIZED THAT CLUMPING WAS THE CAUSE OF MANY FATALITIES. **JANSKY** AND **MOSS** CLASSIFIED BLOOD INTO FOUR TYPES AND ELIMINATED THE DANGER THAT HAD EXISTED DUE TO TRANSFUSING BLOOD THAT WAS OF THE WRONG TYPE.



1828

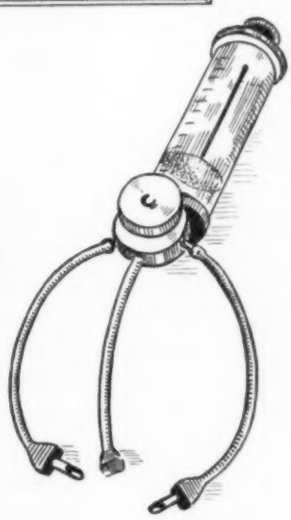
JAMES BLUNDELL, AN ENGLISHMAN, REDISCOVERED TRANSFUSION. HE PASSED BLOOD FROM THE VEIN OF THE DONOR THROUGH A SYRINGE TO THE RECIPIENT.

1935 **YUDIN** OF MOSCOW REPORTED THE SUCCESSFUL TRANSFUSION OF BLOOD FROM A MAN KILLED IN AN AUTOMOBILE ACCIDENT TO A YOUNG ENGINEER WHO HAD SLASHED BOTH WRISTS IN A SUICIDAL ATTEMPT.



1913

KIMPTON AND **BROWN** DEVISED A TUBE, ONE OUTLET OF WHICH WAS USED TO DRAW BLOOD. THE OTHER TUBE WAS USED TO INJECT THE BLOOD INTO THE PATIENT. THE TUBES WERE COATED WITH PARAFFIN TO PREVENT COAGULATION.



1915

UNGER, USED AN INSTRUMENT WITH A FOUR WAY VALVE ATTACHED TO A SYRINGE. TUBES TO THE DONOR AND PATIENT WERE ALTERNATELY CONNECTED WITH THE SYRINGE AND WITH SALINE OR CITRATE SOLUTION TO PREVENT THE BLOOD FROM COAGULATING. - IN THIS SAME YEAR **LEWISOHN** AND **WEIL** CHAMPIONED THE USE OF SODIUM CITRATE TO PREVENT COAGULATION. NOW THE OPERATION HAD BECOME SAFE, SIMPLE AND PRACTICAL, AND THIS METHOD WAS WIDELY USED DURING THE WORLD WAR. MOST OF THE PRESENT DAY METHODS ARE VARIATIONS OF THIS TECHNIC.

HERNIA

***How does it form? What causes it? What is the best treatment, and is it always successful? These and other questions are answered by* GEZA De TAKATS**

HERNIA, or rupture, is the bulging of some portion of the abdominal contents through a weak spot in the abdominal wall. Almost any organ in the abdominal cavity has been found in the protruded portion of the lining of the abdominal cavity, commonly referred to as the sac; however, the intestines and a fatty curtain covering them, called the omentum, are most frequently encountered in the sac.

The cause for these protrusions has been the subject of considerable debate. Workmen frequently recite symptoms of a sudden pain, usually in the groin, which is associated with the appearance of a mass immediately following severe strain. However, it appears that most of these bulgings are facilitated by the previous existence of a weak spot or cleft in the musculature. The outgrowth of a small piece of fat along a small vessel readily drags with it the lining of the abdominal cavity through the muscular wall. Owing to the erect posture of man, the lower part of the abdominal wall is especially subjected to strains and pressures which do not exist in the four-footed animal. There develops a difference in the shape of the abdomen and the lengths of attachments of the bowel, so that it may sag. The funnel-shaped protrusions most frequently found in the groin gradually enlarge, and a sudden strain may make them apparent and fill them with the contents of the abdominal cavity.

In an uncomplicated state, the hernia is reducible; that is to say, the hernia readily slips back into the abdominal cavity when the patient lies down or when gentle pressure is applied; it is irreducible when its contents cannot be replaced. This state may be brought about by inflammation within the sac, by adhesions between the sac and its contents, by hardening and narrowing of the neck of the sac due to wearing of trusses or by sudden accumulation of gas and fecal matter in the intestines so that the hernia becomes choked and cannot slip back into place. A hernia is said to be strangulated when its contents are irreducible; but in addition, there is so much crowding and congestion within the sac that the circulation of the bowel is partially or completely shut off, which in turn produces death of the bowel-wall, leakage of fecal matter through the ruptured wall and often death of the patient from infection spreading throughout the abdominal cavity. Therefore, every hernia, but especially the one having a small communication with the abdominal cavity, carries a risk of strangulation, and if it is not instantly attended to, the outcome is fatal. According to statistics, over 25 per cent of the femoral hernias—occurring high on the thigh and just below the groin—become strangulated; whereas hernias around the navel show this complication in 15 per cent of the cases. The inguinal hernias, those appearing just above the groin, are strangulated even much less frequently.

Any hernia which suddenly becomes larger, which cannot be replaced in the abdominal cavity and is accompanied by abdominal pain, nausea or vomiting is probably a strangulated hernia and demands immediate surgical attention. The practice of trying to reduce the hernia in a warm bath is to be condemned, as one might easily replace a dead piece of bowel which then drains its contents into the abdominal cavity and is apt to cause death. When strangulation occurs, the surgeon immediately operates, frees the trapped bowel, saves it if it is of good color or simply allows it to drain to the outside if it is dead.

Approximately four fifths of the hernias are inguinal—in the groin—and they seldom become strangulated. They still need close attention, however, for they gradually get larger, cause much disability and pain and drag such adjoining structures as the bladder or appendix into their sac. The later they are treated, the larger the defect in the abdominal wall; and the older the patient, the more difficult it becomes to effect a cure.

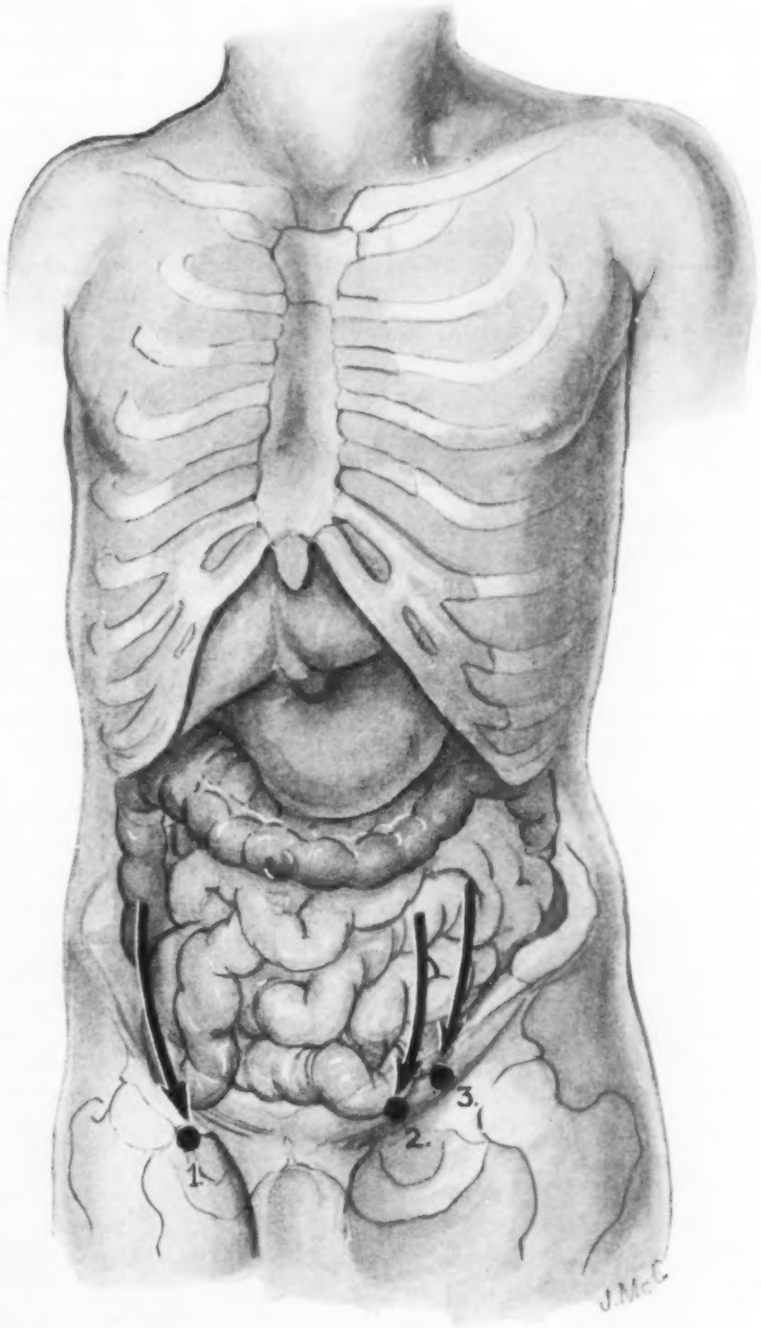
There are three types of treatment prevalent today for the cure of the uncomplicated, unstrangulated hernia. Bandages and trusses were used 3,000 years before Christ by the Egyptians. In the fourteenth century an iron truss was in use; later a steel truss became fashionable. Today, spring trusses and band

trusses are employed. A soft rubber pad covered with cloth is more comfortable than a wooden or fiber pad. The objection to the treatment by trusses alone is that they are dirty, troublesome and, unless skilfully fitted, may cause pressure on the skin and produce thickening and narrowing of the neck of the sac. Nevertheless, they have a limited usefulness in patients who are too debilitated, too old or have some other illness condemning them to an early death, so that an operation seems an unwarranted risk. It is a pitiful sight, however, to see young, strong, otherwise perfectly healthy men wear trusses for the rest of their lives or finally decide on an operation when their tissues are scarred, the muscles weakened and the chances for a permanent cure diminished.

The closure of the defect in the abdominal wall by a surgical procedure is also extremely old and dates back to at least 400 years before Christ.

At present, the surgical cure of rupture is unquestionably the most desirable method, provided the proper cases are selected for operation. The surgical cure has fallen into a certain disrepute with the general public, because it requires hospitalization, a loss of three to six weeks from work and a certain percentage of recurrences. Almost every one has known or heard of Uncle Joe, who at the age of 65, weighing 210 pounds, had finally decided to have an operation for his rupture, which kept enlarging and becoming less and less reducible with the truss he bought at the corner drug store. His rupture promptly recurred after the operation, and the sale of trusses just as promptly went up.

The surgeons of today know that recurrences are to be expected in the presence of poorly developed muscles or in overweight persons, also when improper sutures are used, when there is too short a rest in bed after the operation or when the patient returns too soon to heavy labor. Excessive vomiting and coughing after the operation would occasionally be the cause of a recurrence. The great majority of patients do not need to be put to sleep for a hernia operation. A small dose of sedative before the operation combined with injection of a

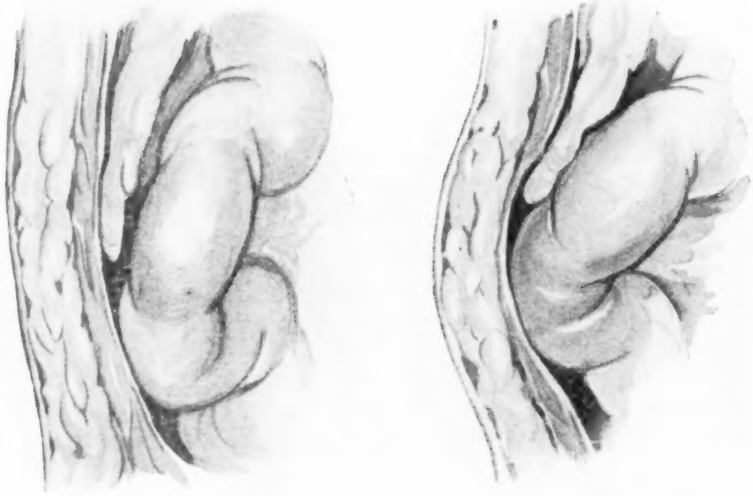


The three most common sites of hernia are (1) femoral, (2) direct inguinal and (3) indirect inguinal hernia.

solution which makes the entire region completely numb renders the operation entirely painless without the loss of consciousness and without all the discomfort of a general anesthetic. Ten days in the hospital and another ten days at home is the usual loss of time; heavy labor, however, should not be started before six weeks have elapsed since the operation.

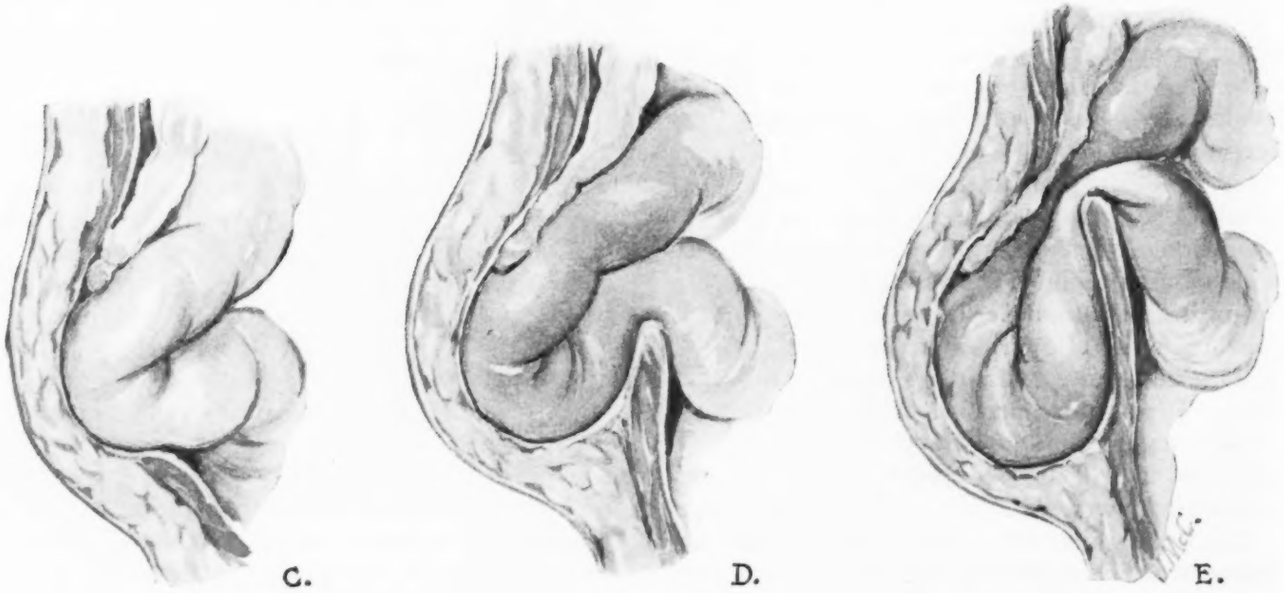
Statistics show that about 5 per cent of hernias reappear, even in spite of careful selection of the patient and perfect surgical technic. Such patients may be reoperated by taking tense fibrous tissues from other parts of the

Progressive Stages of Hernia



A. B.

A. Intestine is in normal position with normal abdominal wall. B. Weakened abdominal wall with intestinal pressure causing slight bulging. C. Definite weakening of abdominal wall with saclike formation; now easily reducible hernia. D. A pouchlike formation of abdominal wall filled with intestines and omentum; this can be reduced but usually requires surgical correction for best results. E. The herniated wall contains loop of intestine and omentum extending through a narrow opening and cutting off most of blood supply; this may be irreducible, and so it is known as a strangulated hernia.



C. D. E.

body and using them to cover the defect. There is one type of rupture, however, which forms a straight canal in the lower part of the abdomen, the so-called direct inguinal hernia; this requires special care, as it recurs more frequently. In such cases the combination of trusses, special methods of suture and possibly some injections may effect a permanent cure.

The injection treatment of hernia has been practiced since the middle of the last century and recently has been revived with improved solutions and more accurate technic. It consists of the injection of irritating substances, such as the extracts of Thuja or psyllium seed, phenol or tannic acid, oleic acids, quinine and urethane alone or in combination. These solutions are deposited in small quantities around the ring, which connects the hernial sac with the abdominal cavity; the supporting connective tissue responds to such injections first with an outpouring of a thick fluid which later solidifies into a heavy scar. This scar, if skilfully produced, forms a tough membrane over the hernial opening and thus closes it and prevents further protrusion from within.

It is customary to measure patients first for a well fitting truss and have them wear it day and night for several weeks before the injections are begun. The rupture must be completely reducible if the injection treatment is to be safe and harmless. Strangulated hernias call for immediate surgery. In cases in which the testicles are not in their normal position in the scrotal sac—such a condition of undescended testicles is sometimes associated with a rupture—injections should never be made, as they would easily injure the testicle.

The injections are done once or twice a week, the patient coming and going from the surgeon's office and not losing any time from work. Depending on the size of the rupture and the response of the patient's tissues, from a few to thirty injections may be necessary to seal off the opening in the muscular wall. When the injections are completed, the use of the truss is continued for another four to six weeks. The patient now should be able to cough or strain without the appearance of any bulging at the site of the hernia.

At first sight, this last form of treatment is the most desirable. No operation is needed, the cost of hospitalization is avoided, and the discomfort during and after treatment is slight and can be readily controlled. Furthermore, should a small recurrence take place, repeated injections can be readily given. However, certain complications may occur even in the hands of men with a great deal of experience. Thus if the solution is placed closely under the skin, a sloughing, slowly healing ulcer may develop. The spermatic cord, an important structure leading from the testicle toward the penis, may be caught in the scar, swell or become compressed. If the injection is placed in or near the peritoneum, the smooth lining of the abdominal cavity, severe pain, nausea and vomiting may occur. These complications appear infrequently and do not lead to permanent harm; but they illustrate the fact that the injection is a blind procedure even in the hands of those who have operated on many hernias and have a good visual memory of the structures to be injected and the structures to be avoided.

But the greatest objection to the injection treatment of hernia is the high incidence of recurrences. It must be remembered that instead of bridging the gap with normal tissues, as it is done with the open operation, a dense scar is formed, which gives way in time and permits the abdominal contents to bulge again through the hernial opening. While the early reports were glowing and reported only an occasional recurrence, more careful and prolonged follow-up reveals from 17 to 20 per cent recurrences. Their number is apt to increase with longer periods of observation.

The injection treatment as it is practiced today is still too new to have a definite place assigned to it. In otherwise healthy, normal individuals, the surgical closure gives the highest percentage of cures; above 55 years, however, or in the presence of debilitating illness, where previously nothing but a truss could be offered, the injection treatment affords relief from pain and a reasonable chance of cure, especially if the patients are frequently reinspected and reinjected if necessary. The truss, of course, still remains for those who refuse injections, refuse operation or who do not have a long time to live. The truss, however, will never cure a hernia, except in small infants, and will not prevent a strangulation. A truss may even bring it on.

Perhaps the most important angle of the whole problem is to select the proper treatment for the individual case. Of course the patient may rely on the advice of a trusted medical adviser; but he often gets a great deal of solicited and unsolicited advice from friends, bandagists, fellow-sufferers and his own carefully considered judgment. Only men who have equal experience in all three forms of treatment can give an unbiased opinion of what seems the best in that particular case. As far as the sufferer's personal opinion goes, it is naturally biased and usually wrong.

HELPING YOUR CHILD GET WELL

***When he must go to the hospital, much tact and many words of encouragement are needed on your part, for on his adjustment to the hospital partly depends his ability to be benefited by it. The right things for you to say are written by* MARY L. POOLE**

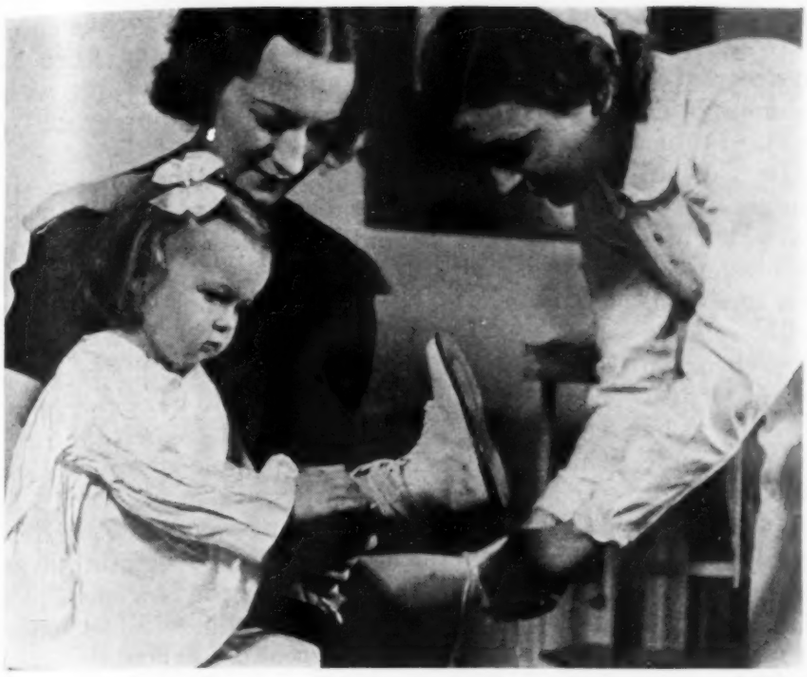
"I THINK your child should be in the hospital." This phrase is heard thousands of times during the year when doctors are called in because little Nancy or Tommy has pain, a fever or other significant symptoms. From the physician's point of view hospital attention is safer than the uncertain, though loving, care given at home. In hospitals there is easy access to laboratory and x-ray facilities; there are opportunities for frequent consultations with specialists; there are many life saving devices with which to meet crises, and, above all, there is the certainty that orders will be strictly carried out. Those who can afford to hire private rooms, and sometimes suites, avail themselves of this privacy; parents with moderate incomes pay for ward care, and parents without means make arrangements for reduced rates or for free care in the wards.

The family will naturally leave to the doctor the arrangements for medical care. Their special problem will be their own and their child's adjustment to the routine of the hospital. It is difficult for parents who do not understand hospitals to face this experience intelligently. And because a child so often reflects his parents' attitudes, it is especially important that adults learn to discipline their emotions so that they will not hinder the child's recovery; on the child's adjustment to the hospital partly depends his ability to be benefited by it.

There are a few simple rules for the guidance of parents, which will lessen the worry and unhappiness of every one.

Unless the child is too ill to talk he should have a chance to share in the plans for his care. He is sick, and he knows it, and he wants to get well. His parents know that the hospital is the place that can best help him to recover and where every effort will be made to make the child happy as well as comfortable. They will know that, except in hospitals where no visiting is allowed, they can visit at stated times and at any time if the child is dangerously ill. They will be able to bring in certain foods and toys as gifts. And in most instances it will be expected that the child will recover and will return to a home that will welcome him. These

The Children's Hospital, Cincinnati



After the doctor has taken down pertinent facts about Sally's physical history, she is undressed by a nurse and her mother. She also helps them a bit, where she can. Then the doctor returns to give her a physical examination, while her mother and nurse stand nearby to offer reassurance if needed.

As Sally has been gradually introduced to the atmosphere and routine of the hospital, she is not overwhelmed with fear and despair when Mother leaves. Instead, she has a feeling of confidence and trust in her new friends.

facts can be assimilated by any child who is old enough to think and reason at all. It is his right that they be shared with him. Even though he may rebel at first against leaving home, later on as he tests these facts against experience and finds them true, he will know that he can trust his parents, and the acceptance of hospital routine will be easier.

When the idea of hospitalization is not introduced in this straightforward manner much damage may be done. Too often it has been thought easier to take the child to the hospital without telling him where he is going. His parents then turn the child over to the nurses

and the intern, and after telling him that they will be back in a minute, they run away. As it dawns on the child that he has been deserted in this strange unexpected place he becomes panic stricken. He howls for his Mother and Father to come back and take him home. He will not want to eat, lie down or do anything that the nurses ask of him. To abandon a sick child suddenly under such circumstances develops in him a deep sense of insecurity and a feeling of distrust towards his parents. He will probably have to return to the hospital for check-up examinations and treatments after he leaves and will relive his original terror each time he enters the hospital building. In years to come this terror may carry over into fear or hate for all doctors and hospitals.

To get over this first unhappy hurdle, know your local hospital facilities; have faith in a child's natural ability to adjust to new experiences, and above all don't leave your child when you are obviously trembling and afraid for him.

The time most dreaded by a nurse in charge of a children's ward is not the time immediately after a surgical operation or at the crucial point in an illness. It is the hours after the visitors leave that strike terror to her heart. There are rules in the book to cover surgical and medical crises, but there are no answers to the problems that follow in the wake of some parents and relatives. Temper tantrums, upset stomachs, hysteria, raised temperatures and quickened pulses are but samples. The nurse and the parents ought to be a team working together to restore the sick child to good health. But instead, the parents are prone to resent the restrictions imposed on them by the nurse concerning their gifts and visits to their children. Therefore, these parents regard the nurse as "cold blooded" and mean, one who delights in depriving the children, and against whose orders constant battle must be waged.

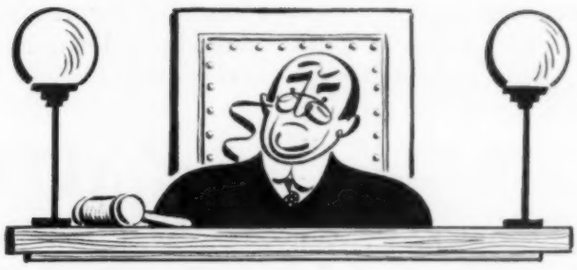
Actually, the majority of hospital wards for children are happy places where children are well cared for, loved and even pampered by the nurses, doctors and attendants. Nourishment is carefully planned to meet all of the caloric and vitamin needs. Orange juice and milk are plentiful and are served between meals. Sometimes ice cream is served in the afternoon as a special treat to those able to have it. There are occupational therapists who can give the children interesting things to make in the way of bead, basket and leather work. Many children's wards have auxiliary committees of philanthropic women who arrange special parties, movies, birthday and holiday celebrations. Of course the routine may be stricter than it is at home, but that is what the doctor wants for the child. Many a child who was bewildered when he came to the hospital has wept for his ward companions and the ward routine when he returned home.

When parents learn that their children are not unhappy, their behavior at visiting times will benefit instead of harm the child's health. The patient, the nurse and parents will all be glad then that there has been a visiting hour and will look forward to the next one.

In the first place, don't ignore the nurse in charge of the ward. Speak with her either when entering or leaving the ward. When the child shows improvement, the nurse deserves some recognition of her hard work in his behalf. In talking with the head nurse, parents have an excellent opportunity to secure helpful advice on special behavior problems. She has had a chance to observe each child with a trained eye, and she knows a great deal about the training of children. If your child objects to habit training, bites his fingers or refuses milk, here is a golden chance to get him on the right path and to learn how to keep him there.

Also find out from the nurse if the child needs anything in particular, and if he does, bring it on the next visit. Hospitals provide most necessities for their patients, but there are some things that should be brought in by relatives, such as money for haircuts and shoes for patients who can walk. It always seems easier and pleasanter to bring in unnecessary, trivial gifts than it does to bring those things that the child really needs. Last Easter, a little sick boy received a big box of chocolate animals that must have cost at least $2.50. For three months before Easter, that child, who was able to be up part of each day, had shuffled around the ward in ill-fitting shoes borrowed from a bedridden patient. The nurse had pleaded with his parents to bring him a pair of shoes that need not have cost more than $1.25. But they never could afford them. He was never able to eat the candy and does not remember that his parents sent it. His feet still hurt when he walks, and the nurse is paying for his haircuts out of her own small salary. Such a thoughtless attempt to please a child could only result in waste.

It is an unfortunate belief that food must accompany all visits to hospitals. Visitors swarm down the halls toward the wards armed with all sorts of delicacies. Soups, cakes, candy, pickles, potato salad, ice cream, bananas, oranges, goulash, watermelons, doughnuts, potato chips, cold ham and chicken are samples of the offerings to sick *(Continued on page 938)*



When Cancer Is *NOT GUILTY*

By RUSSELL S. FERGUSON

CANCER has become America's Public Health Enemy No. 2, a villain second only to heart disease as a cause of death. A hundred and fifty thousand people died of cancer last year.

Yet 35,000 of them need not have died at all. In their cases cancer was not the villain but rather ignorance, fear, carelessness, neglect.

"Cancer" is written on many a death certificate when "suicide" would be far nearer the truth. And suicide is wholly avoidable. So, in a great many cases, is cancer. Fifty per cent of all cancers, if discovered and treated promptly, have an excellent chance of cure. But people either don't know the facts or cannot bring themselves to face them.

As an act of elementary justice, let us put cancer on trial. Let's see whether or not cancer is guilty of every charge of death brought against it.

FIRST INDICTMENT

Bill of Particulars: In 1928 Mrs. "Blake" noticed a small lump in her breast. Her physician advised her of the seriousness of the condition and recommended that she go at once to a nearby hospital where many such cases were treated. Before she could leave for the hospital, however, a "good friend" suggested that Mrs. Blake see "Dr. Jones," who could cure her without an operation. This "doctor" treated her with injections "guaranteed to cure," and for four years kept her from seeking any other advice. Finally, as the disease spread, she again called her family physician, who attended her until her death a few months later.

Family Doctor: "When Mrs. Blake came to me, the lump in her breast was not over a half-inch in diameter. She had no other evidence of disease. I felt confident that this was a very early case and that prompt operation would result in a cure. In fact, I think she might have been cured at any time during the first year."

"Good Friend" takes the stand: "When I learned that Mrs. Blake had cancer, I recalled the wonderful advertisements I had seen in the papers about Dr. Jones. It seemed a shame for Mrs. Blake to undergo an unnecessary operation if Dr. Jones could cure her so simply, so we went to see him. He assured us that he could guarantee a cure with his injections but that they would cost $150 a treatment, paid in advance. Mrs. Blake took her first treatment that day. For four years I thought she was getting along fine then suddenly she collapsed and, unable to continue her trips to Dr. Jones, she again called in the family doctor."

Jury's Indictment: *There is no evidence that cancer killed Mrs. Blake. She was slain by good intentions and the ignorant belief that quacks can cure. The evidence shows that she was properly advised and could have been cured had she followed that advice. We therefore acquit cancer, and indict superstition and quackery. We strongly recommend that measures be taken by the proper authorities to eradicate the quack or, failing that, to deprive him of his means of advertising.*

SECOND INDICTMENT

Bill of Particulars: Mr. "King" had a pigmented, bluish black, non-hairy mole on his right thigh, which he decided to remove by tying a string about its base. The mole came off all right; but the injured tissues immediately became malignant, and the disease spread throughout his body. For seven months he paid no attention to his symptoms. When finally he entered the hospital, his cancer was inoperable, and he died within two months.

Jury's Indictment: *This is a clear case of suicide. The danger of self treatment, particularly in the case of pigmented moles, ought to be well known. Most moles are harmless. Every person has one or more, and the vast majority never give rise to cancerous growths, but there is no possible excuse for disregarding the dangerous characters of some moles.*

THIRD INDICTMENT

Bill of Particulars: Three years ago Miss "Mack" began to pass blood in the urine at irregular intervals. Suffering from a false sense of modesty, she discussed this with no one, although, as the bleeding continued, she began to fear she had cancer. Thus to her mental distress at the thought of an examination, there was added the fear of the result. Even her family had no idea of her condition until she collapsed and was taken to the hospital. There an inoperable cancer of the bladder was found, from which she died in a few weeks.

Family Doctor: "I had known Miss Mack since she was a child. Other members of her family used to come to me regularly for examination, but they explained that she was painfully modest and the thought of an examination was agonizing to her. I suggested that she go to a competent woman physician, but even this she refused to do. When I saw her for the first time after her collapse, she told me she had had symptoms for at least three years. The disease could have been cured at any time during the first six months."

Jury's Indictment: *Cancer is not guilty of this death. The responsibility rests with false modesty and fear. The evidence shows that the symptoms were neglected, and no one can cure cancer unless it is admitted and recognized.*

FOURTH INDICTMENT

The cause of many cancers is well known and the means of prevention firmly established. But cancer cannot be prevented unless people will give proper attention to the conditions known to be precancerous. In the following cases, cancer can hardly be held as the real culprit.

Bill of Particulars: Mr. "Doe" began to suffer from chronic indigestion and biliousness fifteen years ago. Four years later, after a thorough examination, he was told by his doctor that he had inflammation of the gallbladder with gallstones and that his gallbladder should be removed. Disregarding this advice, he continued to suffer mildly from indigestion for ten years, when suddenly he began to lose weight and became jaundiced. An operation at this time revealed a cancer of the gallbladder, which it was then too late to remove. He died six months later.

Family Doctor: "Eleven years ago Mr. Doe came to me with a typical history of inflammation of the gallbladder, which the x-ray showed was full of stones. I advised him to have the gallbladder removed, knowing that an operation would relieve him and that if neglected he might develop cancer. I have never seen a cancer of the gallbladder which did not have a long history of preexisting inflammation or stones."

Family Friend: "Mr. Doe, whom I have known for many years, told me he feared an operation and felt that his condition was not as serious as the doctor had said it was. His indi-

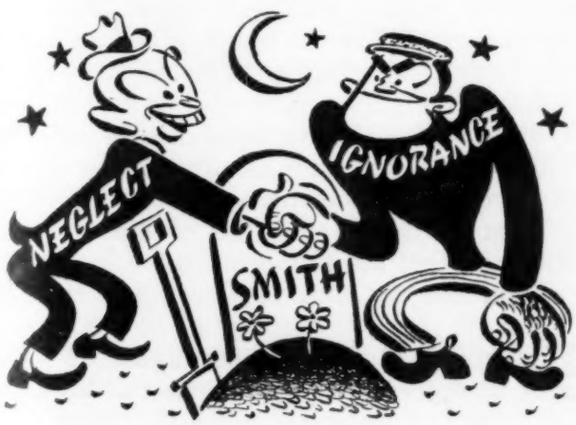
gestion did not bother him greatly, if he watched his diet, and he was satisfied to continue without operation. As the years passed, his conviction grew that the doctor had been unduly pessimistic. He persisted in this belief until he became very ill six months before his death."

Jury's Indictment: *There is no evidence here on which to indict cancer. It is well known that chronic irritation caused by gallstones often produces cancer. Mr. Doe's death was entirely preventable had he followed his doctor's advice.*

FIFTH INDICTMENT

Bill of Particulars: Mr. "Smith" noted a small pimple on his nose, which persisted for some years without increasing in size, then ulcerated and began to grow slowly. His doctor suggested that radium be applied at once. Mr. Smith held the erroneous but common belief, however, that radium treatments were exceedingly dangerous, and therefore he did nothing. Within two years the ulcer spread rapidly over the whole side of his face, finally causing his death.

Family Doctor: "When I saw Mr. Smith the ulcer on his nose was still harmless. These ulcers are easily eradicated; but if neglected, cancer is almost sure to follow. I therefore advised its removal, assuring him that radium, properly used, would do no harm and would certainly prevent cancer. He refused all treatment. When I was called two years later, his condition was beyond medical help. The malignant ulcer had destroyed the whole side of his face."



Jury's Indictment: *Cancer is not responsible for this death. Because of his own ignorance and neglect, the patient died of a disease which could easily have been prevented.*

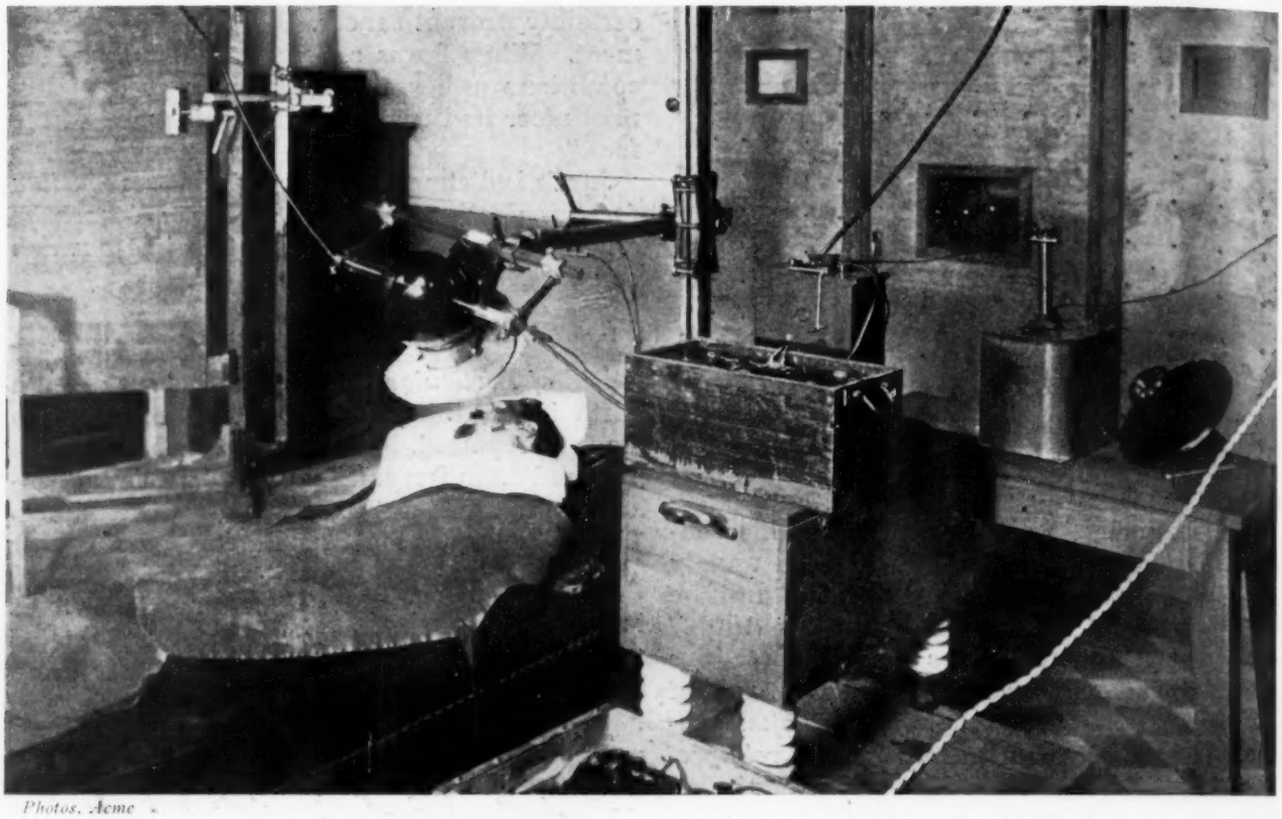
SIXTH INDICTMENT

Bill of Particulars: Mrs. "Banks" sustained a birth injury thirty years ago but neglected to have it repaired. For the past two years she suffered from irregular bleeding, carefully concealing this fact until she was on her deathbed. The record states that Mrs. Banks died of cancer of the womb.

Family Doctor: "Five years after the birth of her child, I attended Mrs. Banks and called attention to the injury. I advised her to undergo the comparatively simple operation necessary, knowing that neglected birth injuries often predispose to cancer. Mrs. Banks continued to seek my advice for various ailments, and as time passed I urged her more and more to attend to the injury. She ignored my advice, however, and when finally I insisted, she refused point-blank. I did not see her again until she was dying of an entirely preventable cancer of the womb."

Jury's Indictment: *Again, there is no evidence that cancer is guilty. Neglect and fear of operation were accessories before the fact and are the real culprits.*

The fight against cancer has, up to now, been carried on by the medical profession, research foundations and the American Society for the Control of Cancer. But unless the layman, which means you, is willing to assist, not much can be done. It's up to you to educate yourself. Cancers arising from long-continued chronic irritation are wholly *(Continued on page 923)*



Photos, Acme

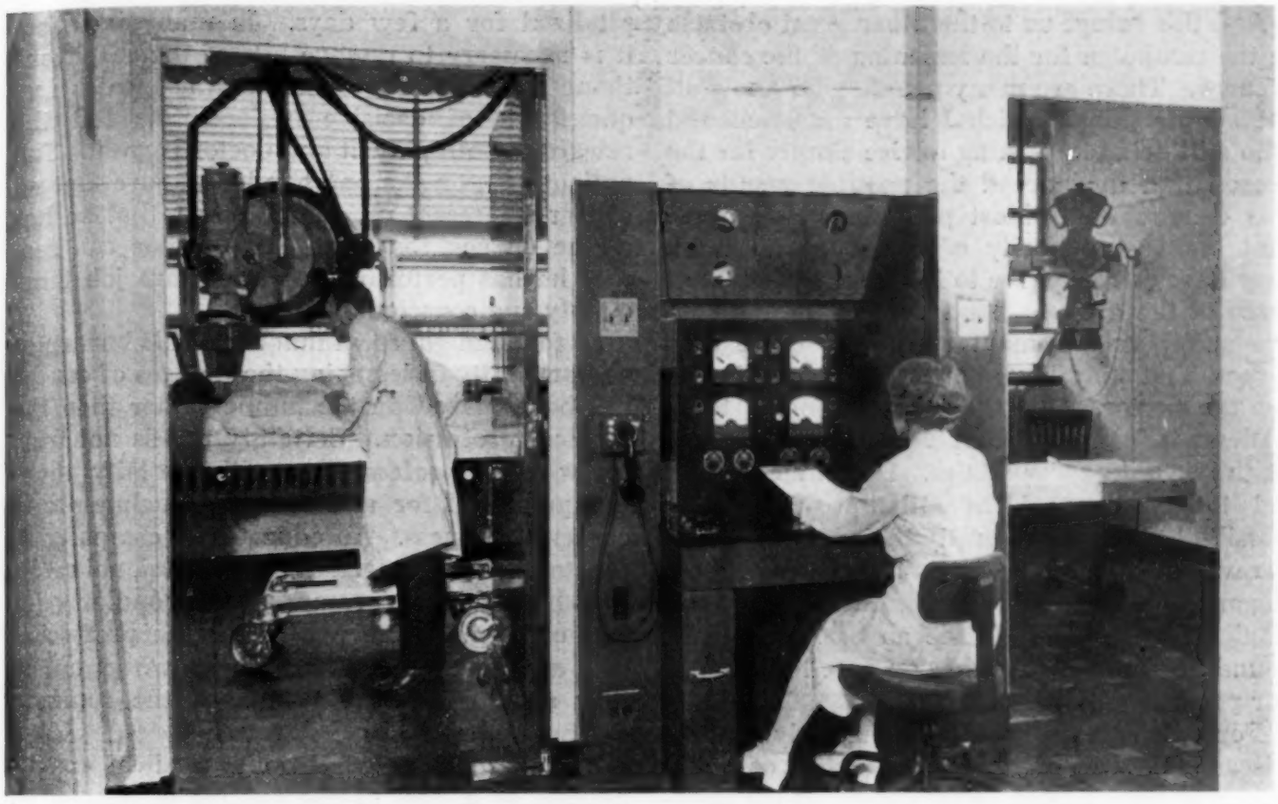
Apparatus of 1928 for treating cancer by the x-rays and radium. Note lead blanket to protect patient.

CANCER—Its Symptoms and Diagnosis—*By EMIL NOVAK*

IT WOULD BE neither possible nor sensible to set forth the symptoms of every type of cancer; only a few simple statements need be made with reference to the comparatively small group of cancer forms which exact the heaviest toll from our people. First of all, the one general statement which demands double emphasis is that pain is *not* a symptom of cancer. Ignorance of this one fact is, to my mind, the most important single cause of the deadly delay of the great majority of patients in seeking examination and treatment. In view of the great publicity which the cancer problem has already received, it is amazing how many people, who are otherwise intelligent, put off the necessary examination because, as they say, "they feel so well and have absolutely no pain." This is not to say that pain is never found with cancer, for the late stage of the disease is often fraught with severe and perhaps agonizing pain. But in the early curable stage, pain is characteristically entirely absent. I have often told patients that it would be a godsend to the race if cancer started off like an agonizing toothache, for it does seem that the only thing which will bring some patients to the doctor is pain.

Any sore, ulcer or hard area in the mouth, tongue or cheeks demands investigation if it does not heal or disappear within a few weeks, especially if the patient is in middle life or beyond. The same statement applies to the skin surface generally. Taking the two sexes together, the form of cancer which causes more deaths than any other is that which involves some part of the digestive system, such as the stomach, liver or intestinal canal. In general the early warnings of cancer in these organs come in the form of a digestive disturbance, such as loss of appetite, loss of weight, discomfort after eating, flatulence and increasing constipation. If the disease is in the rectum or large bowel, bleeding on defecation may be noted, and the person may explain this to himself as probably due to hemorrhoids or piles. While this assumption is often true, it is important to remember that the cause of such bleeding from the bowel may be of more serious nature and that the proper examination should be sought and the cause of bleeding determined at once.

Women unfortunately labor under an extra hazard in regard to cancer because of the great



Modern apparatus for x-ray treatment of cancer. The technician controls everything from this board outside the room.

frequency of cancer of the breast and cancer of the female genital organs, especially of the uterus. Just as soon as a woman over 30, or even 25, notices a lump in the breast she must seek advice. In a large proportion of cases the lump will prove to be entirely benign [not recurrent], but the woman should never let the golden moment slip by through delay, which may mean death if the lump happens to be of cancerous nature. Here again it should be emphasized that the absence of pain means nothing, and as a matter of fact, painful and sore breasts are complained of far more frequently with comparatively harmless conditions than with cancer. A woman with a lump in the breast and with no pain whatever is in far greater need of attention than one with the painful breasts in which no nodule of any kind can be felt. Women can often be taught to feel for abnormal breast swellings or nodules; but if there is the slightest doubt or concern on this point, it is far safer to place the responsibility on a doctor in whom the patient has full confidence.

The other great enemy of the female sex is cancer of the uterus. Here the important thing to remember is that abnormal bleeding or discharge of any kind might possibly mean cancer, especially in women over 30. Bleeding, or even slight staining, between the monthly periods is of special significance, while bleeding occurring after the change of life has occurred should never be disregarded. It is always abnormal and all too frequently is a manifestation of cancer. A wrong belief which has caused the deaths of thousands of women is that excessive bleeding or flooding is more or less to be expected during the menopausal years. As a matter of fact the normal thing at the menopause is for the monthly function to become gradually less and less until it finally ceases altogether.

By way of reassurance it should certainly be stressed that not one of these symptoms is peculiar to cancer alone. Scarcely a person has not had one or more of them without the slightest subsequent sign of cancer development. Sores on the skin are usually not cancerous; lumps or nodules in the breast are more apt to be noncancerous; bleeding from the bowel and abnormal bleeding from the uterus are more often due to benignant than to malignant disease; digestive disturbances are far more often due to simple functional or other causes than to cancer. And yet, from any of these symptoms, there is the ever present possibility of the discovery of cancer. In almost every instance the matter can be definitely settled by the proper sort of examination. So why gamble? And why delay the examination until the diagnosis is pathetically obvious and the patient doomed?

And this brings us to the other great obstacle in the campaign for the lessening of the cancer scourge. There are many people who know all the simple things which I have discussed and who still delay in seeking advice simply for the reason that they dread the possible results of this examination. Most physicians will agree that the vast majority of patients who think they have cancer prove to have not the slightest trace of the disease. And yet numberless people suffer untold mental agonies, quite convinced that they have cancer and dreading to see the doctor. The mental suffering of these patients is far worse than the physical suffering of the actual cancer victim. How much better it is to have the problem settled as promptly as possible! If, as is generally the case, no cancer is revealed, the patient can go on his way rejoicing and be spared months of needless worry and anxiety. If by any chance an early cancer is found, the patient often has an excellent chance for permanent cure.

For cancer is frequently a definitely curable disease, in spite of the foolish belief of many that it is always fatal. Every clinic in the country, and every surgeon of large experience, can point to many patients who have remained entirely free of the disease for many years after proper treatment. As a matter of fact, in a few cities cured cancer patients have formed clubs. But the patients who get well are the ones who do not delay. A patient with early cancer, receiving only what might be called the average standard of present day treatment, will have a far better chance for cure than the advanced case which has the benefit of treatment by the most skilful cancer experts in the world.

When a patient presents himself for examination, he must not think it strange if the doctor cannot tell at a glance whether or not any such serious trouble as cancer is present. Sometimes, unfortunately, the most cursory examination is sufficient, but the diagnosis in such cases means little to the patient, for the obviousness of the disease is due to the fact that it is far advanced. A person in the last stages of consumption can be pretty well "spotted" by even a layman, but the consumptive who has a far better chance is the one who looks perfectly well and in whom the diagnosis is harder to make because the disease is in an earlier stage. In general, it may be said that with cancer as with tuberculosis, the easier it is to make the diagnosis the worse the outlook for the patient. In a large proportion of cases the doctor and the patient both must go to a little trouble to settle the matter correctly. X-ray examinations may be necessary, and the patient may even need to be hospitalized for a few days. In many instances it is necessary to remove bits of the suspicious tissue for microscopic examination, which frequently is of decisive importance. But the reward to both patient and doctor is great. The patient can, on the one hand, feel sure that no cancer is present or, on the other, that he has a fine chance for cure. The doctor can feel that he has performed an important job thoroughly and conscientiously.

So far, it might seem that the whole burden of responsibility in lessening the ravages of cancer has been placed on the public rather than the medical profession. Certainly this is not true, for with the profession as with the laity, there is equal need for alertness, thoroughness and conscientiousness. An educational campaign is constantly being waged in the professional ranks in advance of the campaign of popular education. Neither the public nor the profession can accomplish anything worth while unless they stand side by side against the common enemy.

The importance of periodic medical examinations as a part of the control of cancer, as well as of other organic diseases, has been stressed by almost all authorities, in medical publications as well as in newspapers and magazines. There can be no doubt that such examinations of apparently well individuals will often reveal unsuspected incipient disease of one sort or another and that lives may thus be saved or prolonged. Regarding cancer, such examinations if properly made are of special importance, because they may disclose conditions which, while not serious in themselves, predispose the patient to later cancer. As a rule such conditions are amenable to simple measures of treatment, and the patient is given at least a measure of protection against cancer.

Every sensible doctor knows that no matter how intelligent and cooperative a patient may be, no matter how well posted she may be as to warning symptoms and how quickly she seeks advice on their first appearance, her safety cannot be assumed. There are certain forms of the disease, especially of such internal organs as the stomach, which sneak up on the patient so insidiously that the patient really isn't given a chance. The fact remains, however, that as a rule, warning signals are put out before the disease has advanced very far, and the whole purpose of an educational campaign is to bring to light as many of these early hopeful cases as possible.

The course of cancer in any patient may be divided into three phases. The first of these extends from the begin- *(Continued on page 923)*

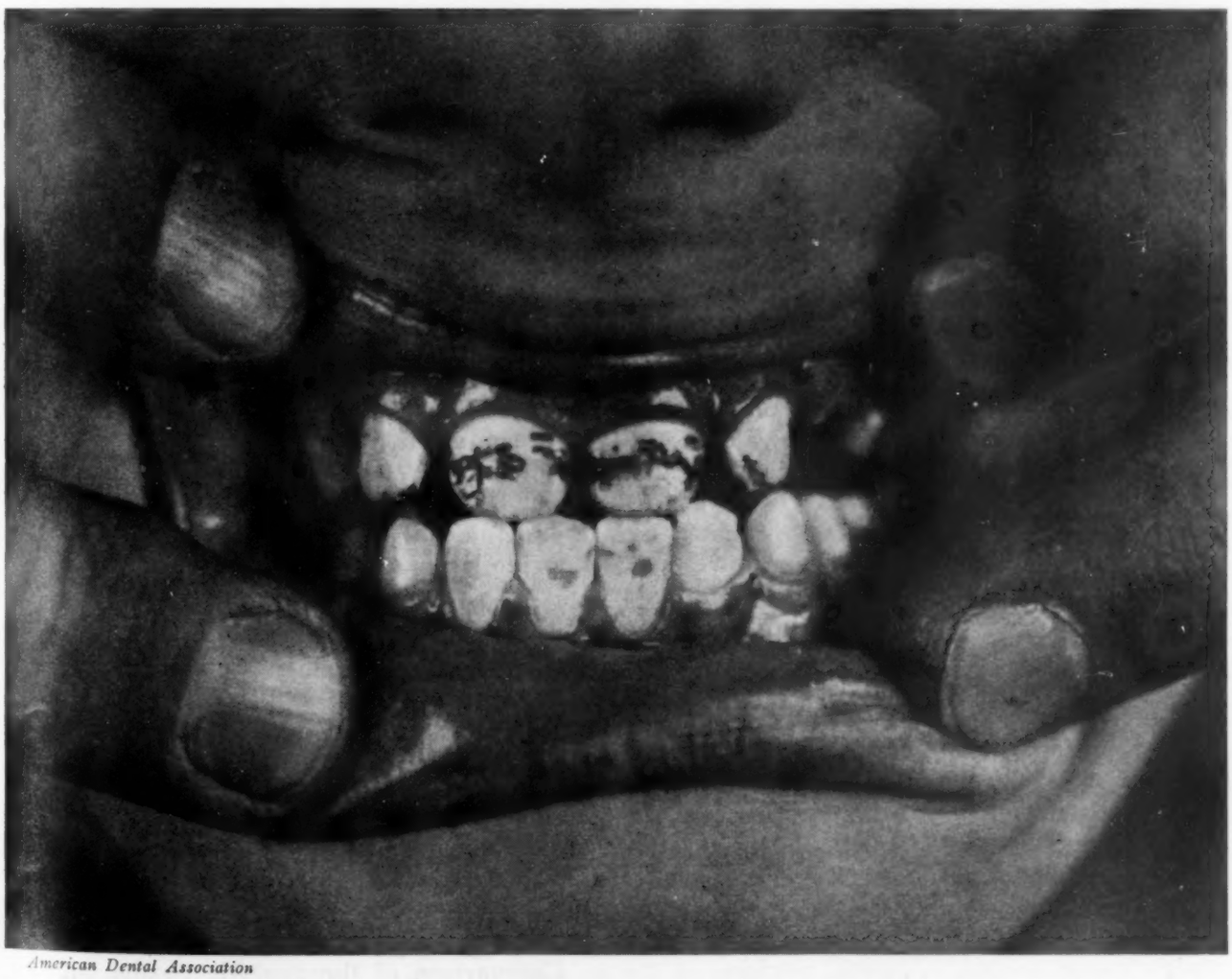
DANGEROUS WATER!

***A small concentration of fluoride in a community's drinking water will cause the formation of mottled enamel on the teeth of every child partaking of it during the growth of his teeth, says* G. A. ABBOTT**

FLUORIDES may be all right to use on bath tub enamel; but they play havoc on tooth enamel. Even when present to the extent of only a few parts per million in drinking water, fluorides injure and may even ruin children's teeth. This malady known as enamel dystrophy, or more commonly as "mottled enamel" of teeth, has been observed for many years; but not until 1931 was the causative agent definitely named.

In milder form the effects may be so inconspicuous as to escape recognition, even by dentists. They present merely the appearance of occasional white spots, with slight pitting and corrosion. As the malady progresses, the affected areas increase until the entire surface of the tooth may be included. The damage is not confined to the enamel surface but involves the entire tooth structure. Disfiguring brown to black stains develop, followed by severe pitting and corrosion. In extreme cases hideous malformations of the teeth are often observed, and the whole tooth structure is hopelessly destroyed.

A puzzling fact early observed was that mottled enamel, like goiter, is generally endemic,



American Dental Association

Such is the serious condition of an advanced case of mottled enamel. It results from a mineral's presence in the drinking water.

characteristically occurring in well defined localities throughout the world. Also in a given area the degree of severity appears to be more or less uniform. Apparently it must be caused by some environmental factor, for children exposed to these conditions during the formation and growth of their permanent teeth rarely escape it.

The malady was described by Eager, of the U. S. Public Health Service, in 1901, after he had observed its occurence at Naples, Italy. Since then it has received much attention not only in Europe but throughout the world. Many suggestions have been offered as to its possible cause, such as improper diet, lack of essential vitamins, calcium deficiency in food or drinking water and even the lack of balanced hormone secretions.

As early as 1916, the Italian investigator, O. Gasparini, attributed this discoloration and corrosion of teeth to the drinking of certain well waters that were low in calcium salts. He suggested that these waters might in some way act to remove calcium carbonate from the tooth enamel, perhaps through the action of carbonic acid in forming soluble calcium bicarbonate. Apparently he overlooked the fact that if this were true, we might expect waters free from calcium salts and artificially charged with carbonic acid, such as soda water and other carbonated beverages, to produce even more marked effects. Nevertheless, his observations were valuable in directing attention to certain drinking waters as the most probable cause of the difficulty.

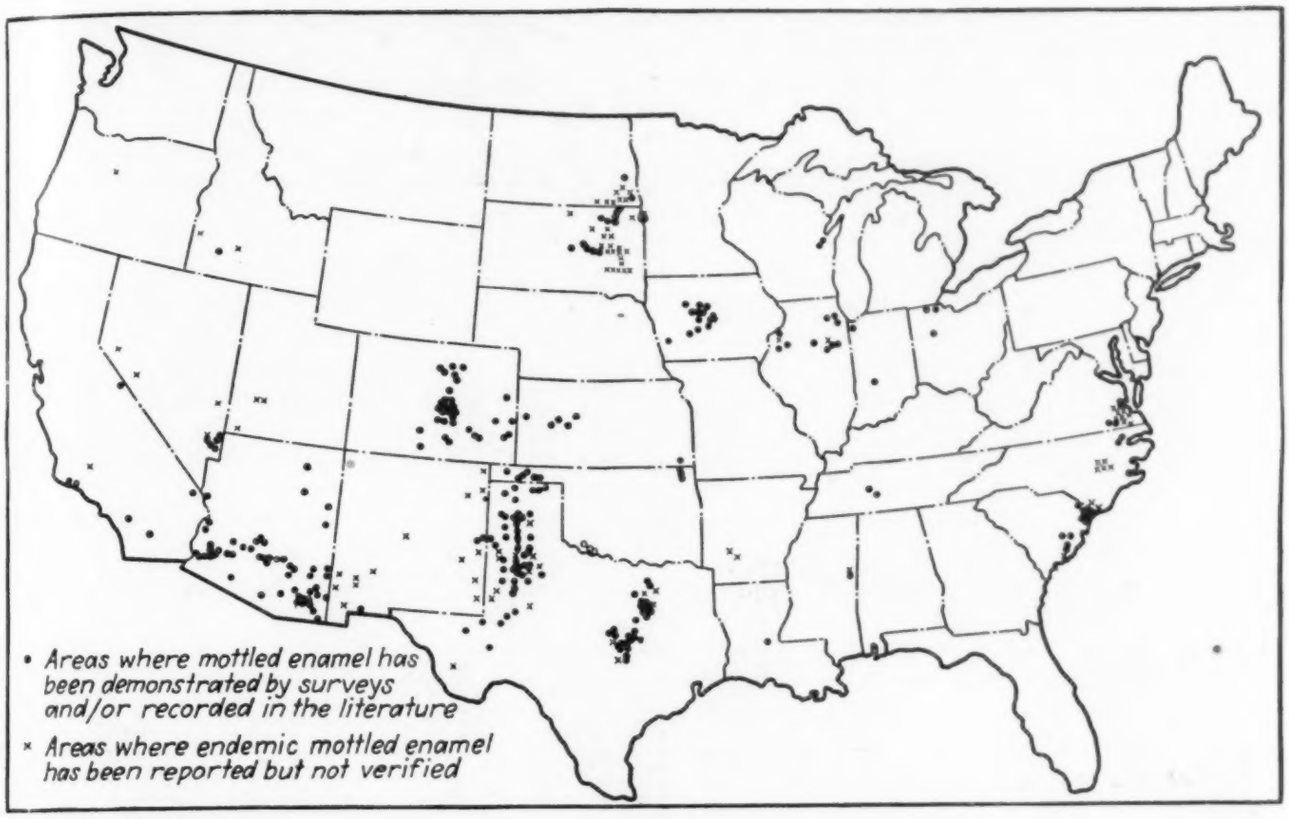
Later investigations supported the belief that the drinking water might well be the trouble maker. Thus, in 1930, after extensive study of the malady, McKay, of the U. S. Public Health Service, stated that while no definite conclusions could be deduced at that time, other than that this enamel dystrophy occurred in certain specific areas in the United States, the causative factors seemed to be definitely associated with the water supplies of these areas. He observed that the exposure of a child to conditions in the endemic regions during the time of his growth of permanent enamel certainly resulted in the development of mottled enamel. Recording his personal observations of conditions at Bauxite, Ark., he stated that the condition of the teeth in that district was definitely caused by the water supply; but he added that the causative agent in the water remained to be discovered.

This put the problem squarely up to the chemist. It was soon solved, in 1931, by M. C. Smith, Lantz and H. S. Smith, working at the Arizona Agricultural Experiment Station. They investigated the occurrence of mottled enamel at St. David, Ariz., and found that every child exposed to the environmental conditions of that community during the years of growth of the permanent teeth had mottled enamel. Further, when dogs and rats drank the St. David water, they also developed mottled enamel. Careful chemical analysis of the St. David water then revealed that it contained the element fluorine, in the form of fluoride, to the extent of 3.6 to 7.15 parts per million. Analysis of waters from regions free from mottled enamel showed either the absence of fluorides or values not exceeding 0.3 parts per million. These investigators concluded at once that the condition known as mottled enamel, whether observed in men or animals, is definitely caused by certain small concentrations of fluorides in the drinking water.

At first this announcement was received with pardonable skepticism. Naturally it seemed incredible that such a serious physiologic disturbance could be caused by minute concentrations of what had been long regarded as a common inert mineral. Surely they must be mistaken. How could these mere traces cause such effects? But after biologists and physiologists had experimented further with animals, they were convinced that there really was no mistake about it; for all degrees of the malady could be experimentally produced merely by giving to these animals over sufficient periods of time amounts of fluorides no greater than those reported as occurring in the drinking waters.

Following these discoveries, extensive surveys have been made to determine the occurrence and distribution of fluorides in drinking waters. The U. S. Public Health Service has also conducted a nationwide dental survey by counties to determine the location of areas throughout the country where mottled enamel is endemic and severe. I have made a statewide fluoride survey of the ground waters of North Dakota and observed a remarkable distribution of the fluoride in the waters of the Dakota Sandstone artesian area. It was found that this distribution could be represented on a map of the region by regular contour lines enclosing a series of concentric areas or zones. The values of fluoride varied from about 3 parts per million in the outer zone through regularly increasing amounts as the successive zones became smaller, finally narrowing down to a small district where the highest fluoride values were observed, about 9 parts per million.

Comparison of the analytic results with the information obtained from the dental survey


• Areas where mottled enamel has been demonstrated by surveys and/or recorded in the literature
× Areas where endemic mottled enamel has been reported but not verified

Engineering News-Record

Distribution of mottled enamel in the United States in February 1938.

showed that the correlation was complete and convincing. In every instance where mottled enamel was reported as general and severe, the artesian waters of that region contained correspondingly high fluoride values; while in localities within the area where shallow fluoride-free waters were used exclusively, mottled enamel was observed only among those who had moved into these localities from other affected regions. Throughout the whole territory the severity of the malady was found to follow the contours of the fluoride map.

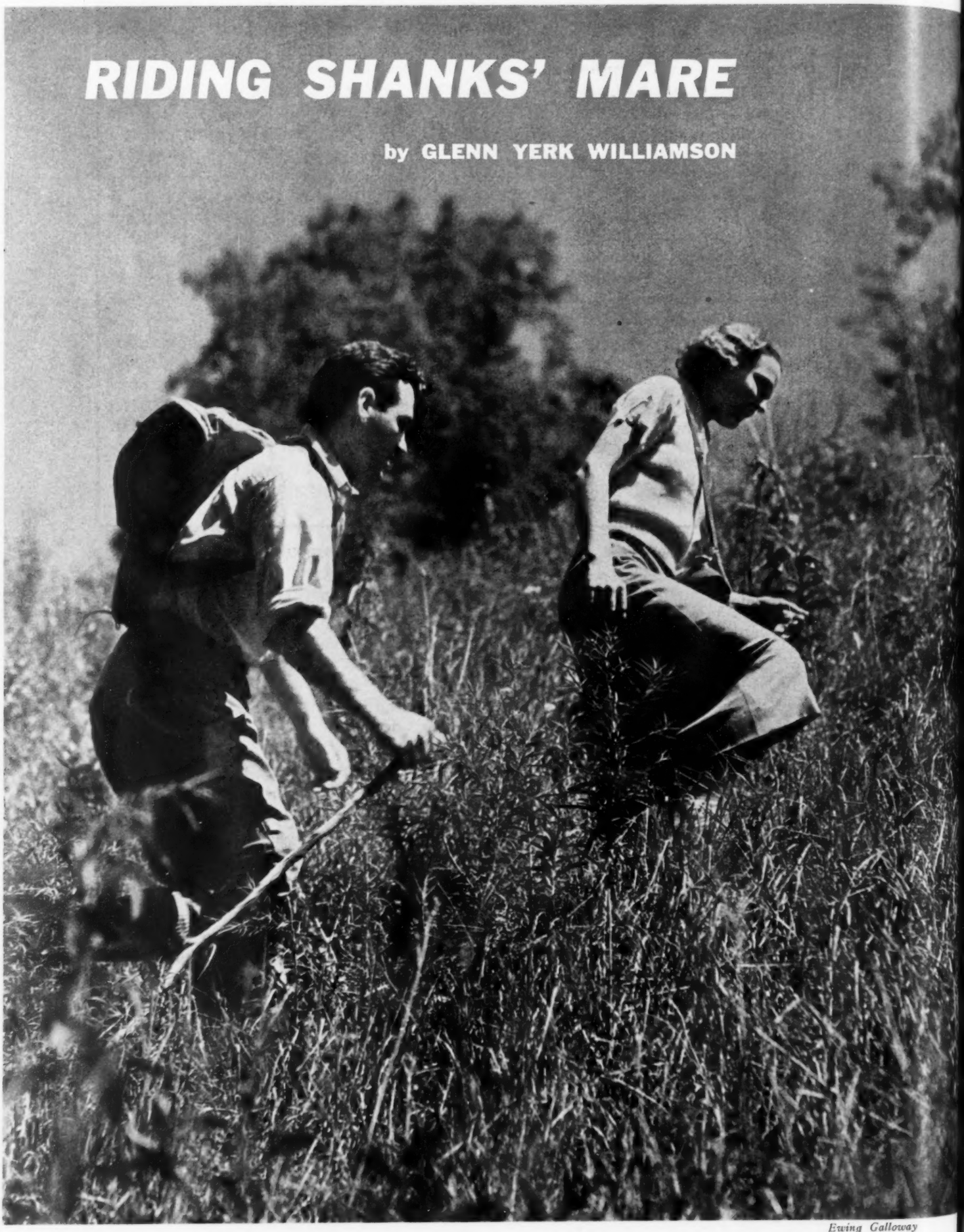
Drinking water high in fluoride is a matter for serious concern. Throughout the country the problem has become more important than at first supposed, and health departments are now actively investigating the effects of fluorosis.

The discovery of the relation of fluorides to dental lesions has stimulated a surprising amount of further physiologic research. The results are somewhat disconcerting; for they show that mottled enamel apparently is not the only pathologic effect caused by the ingestion of fluorides. They are reported to cause alteration of the bone structure and also enlargement of the thyroid gland, amounting in some instances to the artificial production of exophthalmic goiter. Fluorides also seem to reduce the calcium content of the blood, with a resulting disturbance of the body metabolism. High blood pressure and the development of certain forms of nervous disorders have also been reported. These investigations suggest the possibility, and indeed the probability, that mottled enamel of teeth may be only the most noticeable effect produced by continued drinking of water containing fluorides and that other serious bodily disturbances may result—effects which we had never thought of referring to this obscure cause.

People in the mottled enamel regions naturally are anxious to know what to do about it. Unfortunately, the only answer at present is the blunt advice, "Don't drink such waters." But it is distressing to learn that over a wide territory, especially the dry belt of the Great Plains, many people have no other available domestic water supply. This is particularly true of many farm homes throughout the artesian area. Cities and villages are usually, though not always, more fortunate; for often they can obtain better water supplies by drilling new wells of such depth that they take the water from overlying formations and do not tap the deeper fluoride-bearing water. The situation is often different for many farmers and others who may not only lack the funds necessary for drilling new wells but who are also confronted with the difficulty that in many districts such wells fail to yield sufficient supplies. *(Continued on page 924)*

RIDING SHANKS' MARE

by GLENN YERK WILLIAMSON



Ewing Galloway

Hiking is nature's exercise. It is also a form of massage which eases and relaxes the muscles at the same time that it strengthens them. Take the tips offered here and start out right—right away!

WHAT has become of those dust-laden disciples of Edward Payson Weston and Dan O'Leary who used to wear out good shoe leather pounding the arterial highways that radiate in all directions from our teeming cities? Has hiking in America gone the way of the dodo bird and the passenger pigeon?

Periodically, those two burning questions are hurled at me; and I, a writing man who happens to know a few things about pedestrianism, am called on to furnish the answers.

The reason you don't see many hikers on the main highways nowadays is because they have been crowded off by the impetuous automobile; and rather than risk their necks indulging in a healthful sport that has grown to be increasingly hazardous in congested areas, these foot-loose people wisely have retreated to the woodland trails. And they're glad they have. Trails from the Appalachians to the Sierra Nevadas this year hear the tramp, tramp, tramp of thousands of bright-eyed hikers who, answering the siren-like call of balmy days, unknowingly make up an army of outdoor devotees. The public seems to be ignorant of this "army" whose members constitute one of the most popular branches of organized sports. Yet over 150,000 Americans belong to more than 200 hiking clubs, and it has been estimated that the woods are full of at least 200,000 free-lances. Such numbers are to be reckoned with!

Every year, as regular as clock-work, our eastern colleges send out full-fledged hikers who belong to nearly thirty clubs, which boast a total membership of nearly 15,000. They are linked with the Intercollegiate Outing Club Association. If the present trend continues its rapid pace, and there is every reason to believe it will, the day is not far distant when hiking, like skiing, will fall under the powerful influence of promotional campaigns. Already trail shelters are springing up, youth hostels are being constructed as rapidly as possible, and certain well known clubs have recognized the virtue of hiring botanists and nature experts for trips.

Without the valuable assistance of far-seeing organizers, hard working clubs and regional trail administrative associations, it is unlikely that hiking, born as a major sport in the early 1920's, would have grown to be a robust child. But it did; and with the priceless services of the Civilian Conservation Corps helping in the vitally necessary task of building thousands of miles of cut trails that intersect many of the nation's mountain ranges and vast public reservations, its adult life was assured.

Today, thanks to all that preliminary activity, hikers of both seacoasts enjoy trunk trail systems. For instance, there is the famed Appalachian Trail which is composed of huge links "lifted" from the Long Trail of Vermont, the Appalachian Mountain Club system in New Hampshire's rugged White Mountains and of smaller links of trails not so well known in Pennsylvania, New Jersey, New York and Connecticut. It thus forms a gigantic and unbroken chain extending for nearly 2,100 miles from Maine to Georgia.

Not to be outdone by such a brilliant piece of work, the various hiking organizations on the other side of the continent have gathered laurels for themselves by conceiving and developing the Pacific Crest Trail System. This system, like the Appalachian Trail, is built from links taken from smaller trails. Extending for 2,300 miles from the Canadian to the Mexican borders and threading its way through national, state and county forests and parks, it leads its followers over heroic country that, despite the element of isolation, offers many pulse quickening and scenic delights.

Hiking experts and nature writers all agree that spring and fall are the seasons that witness the greatest activity in hiking and that the sport drops to low ebb in the hot summer months. It has been my observation that half day and full day hikes enjoy the greatest popularity, followed closely by week-end, overnight and week tours. It isn't surprising, of course, that the Sunday trip has always been one of chief interest to hiking enthusiasts the world over. Here in this country, many trunk trails are to be found rather close to populous centers, thereby affording one-day hikers an unusual opportunity to test their ingenuity in mapping out trips over many different combinations of interesting and varied side trails. Literally thousands of city-born hikers have on innumerable occasions entered an inviting mountain pass by dawn's early light and left it by traveling through another valley in the beauty of dusk.

For example, the trail systems lying within a distance of 30 to 50 miles of New York City are so ideal from the standpoint of enjoyable side trips that one could hike every Sunday in the

whole year without covering a single mile twice. And this achievement actually is being done, year after year, by that premier hikers' organization known as Yosians, which budded and burst into bloom under the guiding genius of J. Otis Swift.

Making "straight paths for our feet" brings to the surface a multitude of questions involving what to wear and how to hike. Obviously, feet and footgear demand serious attention.

Recently, a survey was made among 700 men and women, equally divided in residence between farm and city. The farm dwellers had the best feet! As a matter of fact, 70 per cent of the farmers possessed faultless feet, while only 40 per cent of the city men had strong arches. More than half the farm women could lay claim to perfect feet. But not one city woman owned them. Pathetic? Definitely! Not long ago, a physical director at a woman's college had a hunch that the students were not paying a great deal of attention to the hygienic aspects of their shoes; therefore she decided to do a little sleuthing. From a mass of data she learned that out of 311 girls, 269 were wearing shoes that were both too short and too narrow; that 80 girls were wearing shoes that had been purchased *without* fitting, and that 89 per cent of girls having good feet had good posture.

When we realize that misfit shoes cause 78 per cent of all foot troubles, we can see that in selecting our hiking shoes we must not employ Procrustean methods. The cardinal idea is to get a pair of comfortable shoes, neither too tight nor too loose. Heels should be of a height consistent with what you are accustomed to, for to try hiking with shoes of low heels or none at all will paralyze your legs before many miles are covered. Remember, however, that reasonably low heels are what every hiker needs and should insist on having. The shoes I use have a broad, roomy toe, straight last, snug heel and instep and soft, pliable leather. Reaching just over the ankle, they are practical for all ordinary purposes.

Wool is the ideal material for hosiery, and when I make this statement I can hear the whole-hearted approval of 99 out of 100 seasoned timber cruisers, prospectors and trappers. It owes its superiority to the fact that it cushions the feet against harmful jolts, absorbs perspiration and serves as a sort of thermostat against sudden climatic changes. If you can't tolerate wool, as is the case with many hikers, try the excellent plan of wearing lisle or silk next to the skin. This procedure, you see, enables you to have all the advantages of wool without suffering from its one disadvantage, scratchiness.

The old Greek maxim, "Nothing to excess," is a splendid rule to follow in regard to outdoor wearing apparel; and the basic thought to keep everlastingly in mind is that light, porous clothes are best, for common sense tells us that the skin must breathe and the rippling muscles must not be constricted in their movements. Hiking creates warmth. And this warmth, if permitted to become great enough for profuse perspiration, has a pronounced enervating or tiring effect on the body. Every hiker is his or her own doctor when it comes to clothing.

One question often asked by embryo hikers concerns the right way to walk. In answering it, we must assume that one has learned to walk before one attempts to hike, for a conservative estimate reveals that scarcely one person in twenty knows how to walk well. The right way to walk is the natural way! Some authorities will advise you to "toe in," while others will go so far as to tell you what the length of your stride should be; some will lecture you about the heel-and-toe stride, while others will point out the merits of the "flat-foot shuffle." Frankly, there's no occult mystery about how to get the best performance from your shanks. If you walk often enough and far enough, your feet automatically will find their natural position, whatever it may be, and you will soon acquire the knack of swinging along in that effortless, rhythmic, pendulum-like style that has been termed "beauty in motion."

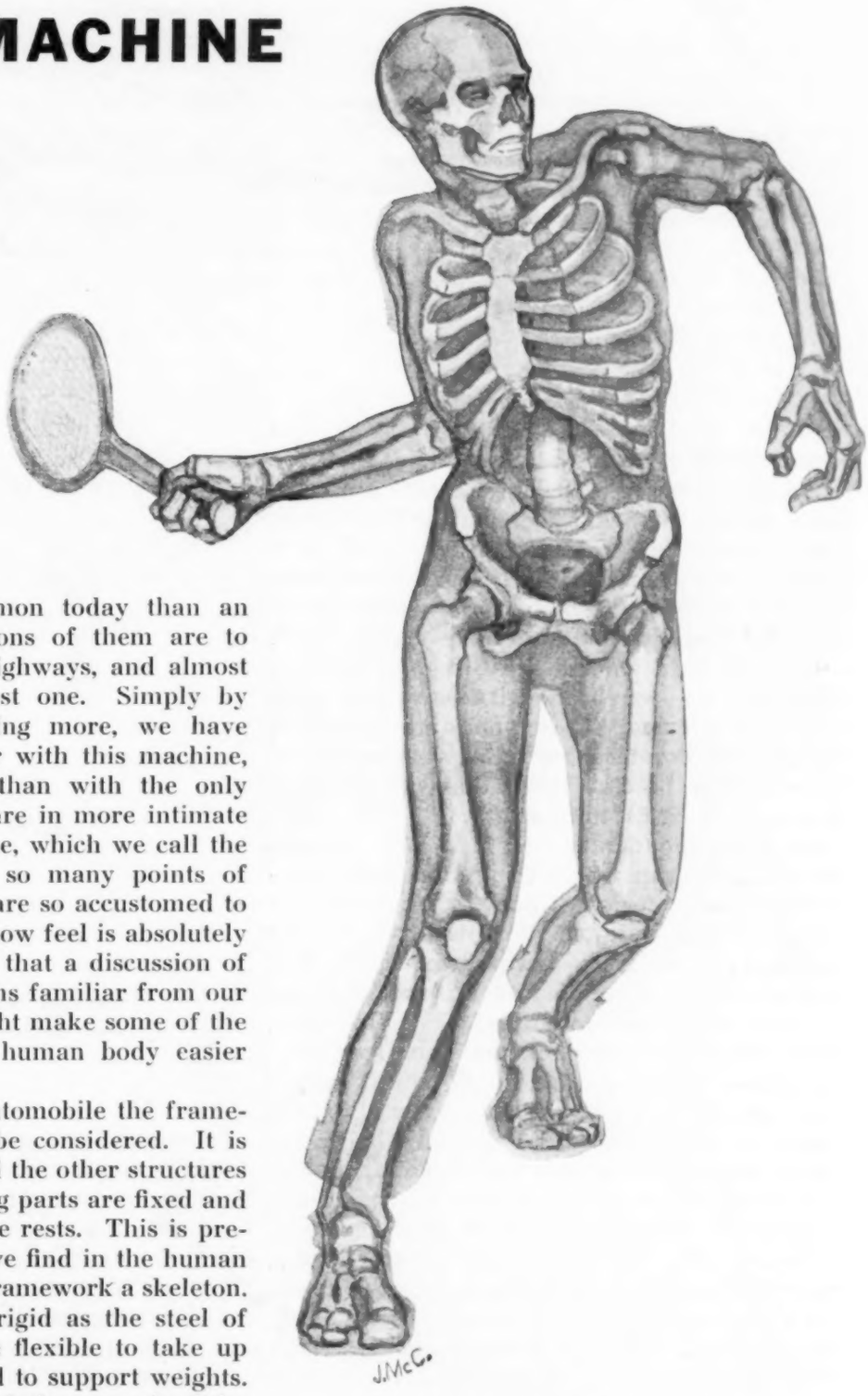
At first, when you awake to the realization that you are a biped and that your shanks constitute a really ingenious method of economical locomotion, a short hike may tire you. However, unless you're afflicted with kopophobia (fear of fatigue), you will find your enthusiasm increasing in proportion to the length of each consecutive trip. It is then that hiking ceases to be drudgery, and almost magically it becomes one of the most refreshing and zestful of outdoor sports.

Riding shanks' mare is healthful simply because, in the final analysis, it is nature's exercise. Yet, paradoxically, it isn't an exercise in the accepted meaning of the word. It's a form of massage. And this exercise-massage, as it were, eases and relaxes the muscles at the same time that it strengthens them. Then, too, it builds stamina and endurance rather than cumbersome brute strength. Two miles of oxygen three times a day is a prescription with guaranteed results. A mile a day, while infinitely better than no walking at all, is not enough to work up a healthy circulation. I know people in my own town who try to get by with this sort of thing, and I have *(Continued on page 924)*

WONDER STORIES of the HUMAN MACHINE

GEORGE A. SKINNER
draws an apt comparison between the popular motor car and the human body

I: THE FRAMEWORK

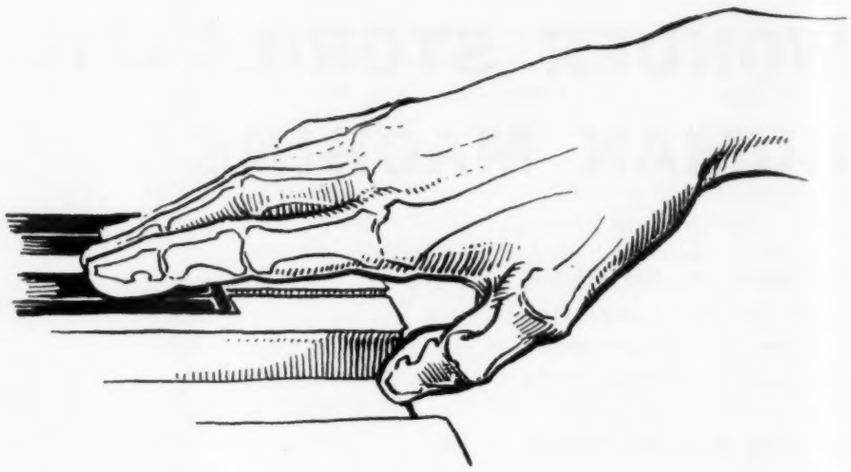


Long bones, short bones—each one placed where it can serve most usefully. Some are rigid; others flex to the needs of the body.

WHAT is more common today than an automobile? Millions of them are to be found on the highways, and almost every family owns at least one. Simply by frequent contact, if nothing more, we have become somewhat familiar with this machine, probably much more so than with the only other one with which we are in more intimate contact, the human machine, which we call the human body. There are so many points of similarity, and most of us are so accustomed to the automobile, which we now feel is absolutely necessary in everyday life, that a discussion of the human machine in terms familiar from our automobile association might make some of the fascinating stories of the human body easier to understand.

In the assembly of an automobile the framework is the first thing to be considered. It is the foundation on which all the other structures depend, to which all moving parts are fixed and on which the superstructure rests. This is precisely the same condition we find in the human machine; only we call the framework a skeleton. Parts of it are almost as rigid as the steel of the automobile; others are flexible to take up shocks, to stand strains and to support weights.

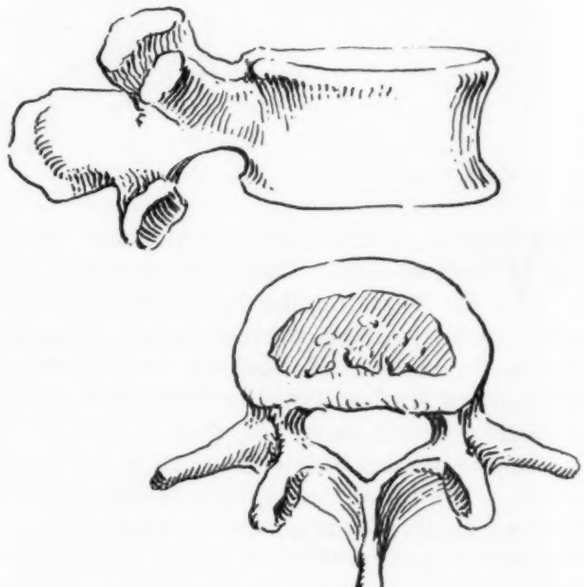
There are 200 pieces in this framework of the body (not counting the tiny bones of the ears and some small ones that sometimes develop in the tendons), which are really much more wonderful than steel and much more durable. A piece of steel, no matter how well made, will decompose in a few years, if left out in the weather or buried in the earth; but human



In the hand are the typically short bones, where speed of motion rather than sweep of action is required. Watching the nimble fingers of a pianist makes one wonder how such rapid and sustained motion is possible.

remains or bones have been found that are thousands of years old. These bones are composed largely of various calcium (or lime) salts, which are of the most enduring of all substances. They are combined with several other salts of metals or minerals, together with organic matter, which adds temper to it, for it is not only hard enough to resist many shocks, but elastic and tough enough to give and bend without fracturing. These bones are formed in the most elaborate shapes and sizes, each for its particular function and admirably adapted to the work it is to perform.

As differing demands on a car require mechanical forms of differing sizes and structures, so many forms of bones are required in the complicated system of movements we are constantly making. We would expect to, and do, find that there are a number of special forms in which our bones are molded. We have long, short, flat and irregular bones. The long ones are cylindrical in form and hollow in construction, making the strongest known shape for the weight of material used. These long bones are placed where their length will serve for motion over a long range. Some of these have spherical "heads," so that they can turn in almost any direction. We have a beautiful example of a "universal joint," so important in both human and motor machines; such joints are in the hip and shoulder. The long bones are found mostly in the arms and legs, where they serve to support and transport or serve the mechanism through a long range of motion. One can readily note the similarity of the piston rods of the auto to our long bones. We do not ordinarily expect much speed of such bones, that is, in comparison to the short ones, although a modern tap dancer seems to activate these bones in rather rapid motion. All bones have rough



One of the hollow bones of the spinal column as viewed from the side (above) and from the front (below).

spots and protuberances where the muscles attach, and these are most clearly seen in the long bones mentioned.

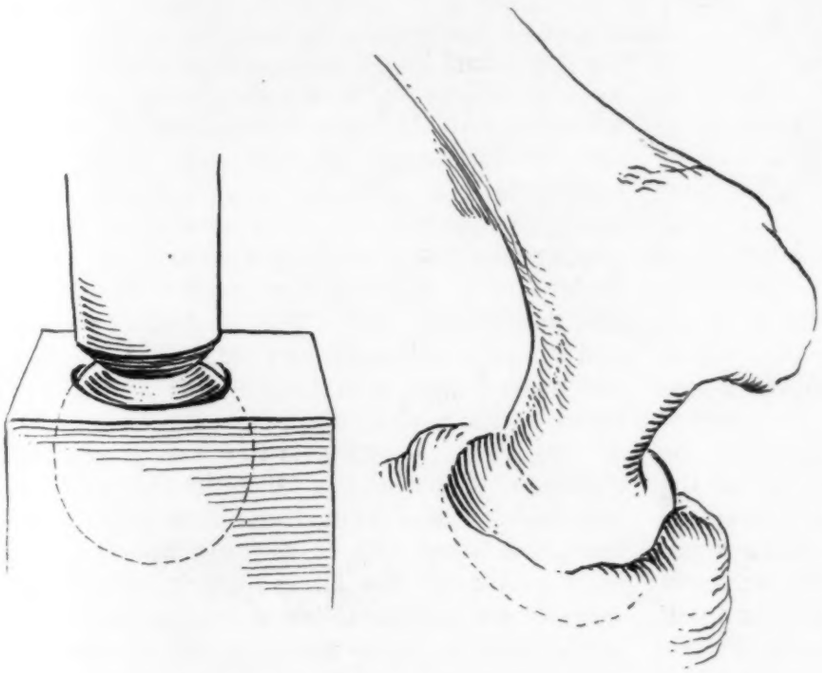
Short bones are almost identical with the long ones except in size. A look at your hand through an x-ray machine will show typically short bones, and they will be found where speed of motion rather than sweep of action is required. Watching the nimble fingers of the typist or pianist makes one wonder how such rapid motion is possible; but not only is it possible, but it may be kept up for hours at a time, if the hands are trained. The valve tappets of an engine suggest the motion of the short bones.

The "vitals," or organs without which life would be impossible, must have better protection than ordinary, as must the active machinery

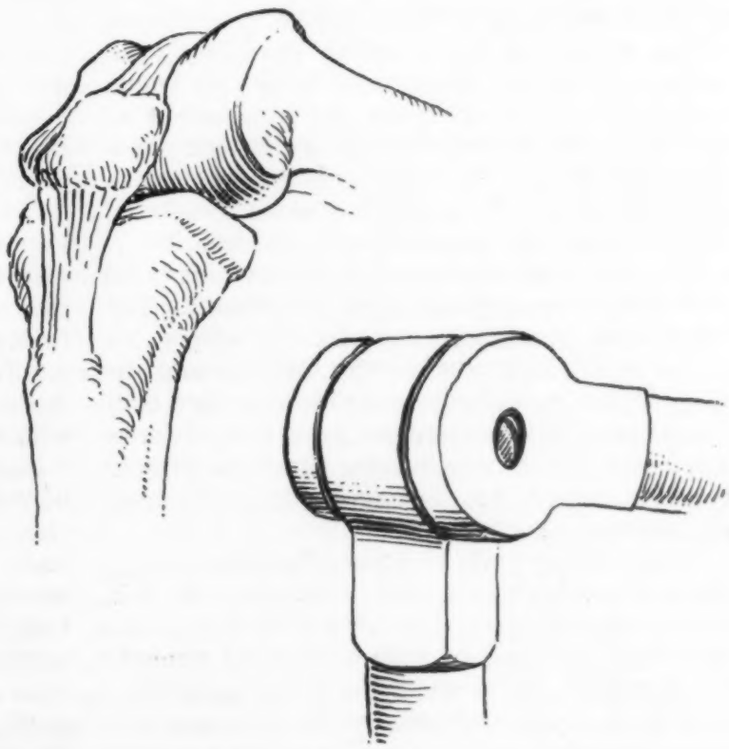
of the motor car. Such machinery is under the hood or encased in some protective device. So we have flat material, platelike, used for this protective function; likewise, flat bones protect cavities. The most delicate of our organs have the greatest protection; thus the skull is a dense, bony box, protecting the brain. This bony box, or skull, is of such form that blows tend to glance from it, for nearly everywhere it presents a curved surface. Moreover, it is highly elastic and will deform to a considerable extent without breaking.

Within the chest cavity are other vital organs encased in another bony box, which, while in a different form, serves a similar function. But in this case there must be constant motion, and provision is made for this by having a number of slender, curved pieces, the ribs, which are so mounted that they move up and down, as air passes in and out of the lungs. While these bones are similar to long bones and might be so classed, they are usually called "flat" because of their protective function and slight motion. Most flat bones are practically immobile, but the ribs are exceptions to this. Flat bones are generally anchored to each other by irregular "dovetailing" beautifully done and by forming tight and strong joints. This is best seen in the skull, where these joints are called "sutures."

One other variety of bones does not fit into any of these three



The ball and socket, or universal, joint may be found in the hip and shoulder joints of the human machine. They can move freely in every direction or permit such motion.



Joints are purely mechanical methods of changing the direction of force. One of the most common types is the hinge, which exists in the elbow and knee joints. The surfaces of the bones at the joint are cushioned with a strong elastic material, cartilage, which makes all movement frictionless.

classes. And though some of them have similar functions, they are called "irregular" for their peculiar shapes. Where great strength is required and little motion, these bones will be found. In our back bone, which is the foundation structure for all the upper part of the body, there are some thirty-three oddly shaped bones, twenty-four of which have a rather large hole through the posterior [or rear] part and lever-like pieces protruding back. The top and bottom surfaces are smooth, as though designed to slide around. This is a part of their work, except at the lowest section of the column where the bones unite to form larger masses. Cushions between these many bones ease the movement between each two and afford a surprising amount of flexibility and elasticity to the spinal column. These disks somewhat resemble the springs of our cars; they do not move much, but what a difference they make in the comfort of riding! If one does not think his back moves much, he needs only a soreness of the muscles, which can be caused by too violent or prolonged exercise, to discover that everything he does seems to start from the back bone. This column protects one of the most important structures of the body, the spinal cord, the main cables of our electric system. Hence this elaborate group of irregular bones interlocks in the most remarkable way and still gives motion and flexibility while offering the maximum of protection. Other bones of this character are found in the wrists and ankles, and these also seem to be entirely fixed. There is, however, some sliding among these bones, which gives the joints great flexibility with unusual strength. These small bones are rough and have plenty of space for attachment of binding ligaments and tendons, so that the bones often break before the ligaments give way. Eight of these little irregular bones are found in each wrist and seven in each ankle joint.

The bones that have motion are various types of levers, from a mechanical standpoint. The third class predominates: that is, where the power is applied between the fulcrum and the weight, thus producing rather rapid motion over a long range but requiring a good deal of force. They are beautifully made, function without waste of power or motion and with a minimum of friction.

Where many parts of a machine move freely, there must be many places where they rub, which must be shaped to reduce friction to the minimum compatible with maximum strength for the joint. It is so in the human machine. The surfaces are cushioned with a strong elastic material called cartilage, which forms a smooth surface and makes motion nearly frictionless. Again we have imitated nature, and later model cars have many rubber buffers and joint surfaces.

Joints are purely mechanical methods of changing the direction of force, and many joint forms are in daily use. We use one such motion every time we open a car door, for the hinge is common. The same hinge exists in the elbow and knee joints. There is a sliding motion seen in the pistons of automobile engines and other machines, and we find the same motion between the individual bones of the spinal column. The wrist is almost the same, except that there is the sliding of a number of small bones. There are several forms of universal joints, and because of the large surfaces exposed in such joints, friction must be at the minimum. These joints move freely in every direction, or permit such motion, and none is more efficient than the ball and socket joint. This we find in the hip and shoulder joints of the human machine, and the nearest approach in the auto is the universal joints usually found on the ends of the driving shaft. Another is the rolling joint (or rotating), that can move only in one direction and back. When we turn the hand over so that the palm is up, one of the arm bones rotates in a collar at the elbow which makes this exceedingly useful motion possible, and a similar motion is made when we move the auto throttle.

Around the bones is a tough and strong covering, much like the durable plating that may now be put around metals, which strengthens these structures materially. In the human machine it does more. It is made up of two layers: The outside one is tough and furnishes attachments for the tendons of muscles. The inner one carries many fine blood vessels and covers all the bones except the bearing surfaces of the joints. This membrane (the periosteum) is extremely important in feeding the bones so that they grow normally and are properly maintained. In the hollow parts of the bones we find a soft gelatinous substance, the marrow, which is important not only to the bone but to the whole body.

Nothing is more wonderful than the way the bones enlarge as the body increases in age and size. At birth there is not much bone in the body, but in place of what will later become bones is an elastic, tough material called cartilage. Bone formation is rapid and spreads until all the cartilage is replaced except at the ends of the bones. Here the cartilage remains until growth is complete, and during growth bone cells are added at *(Continued on page 931)*

By **ROBERT PARK MacHATTON**

Photos, American Red Cross

Here an explosion wrecked a school, illustrating the proportions such a catastrophe can assume.

DURING the past several years more than 3,000 school fires have occurred annually in the United States. Translated into figures that make this a far more personal story, it means that on an average one school in each county throughout the country is visited by fire every twelve months.

The fact that fire is still one of man's worst enemies, that it is no respecter of persons or places and that it may bring incalculable misery and suffering to an otherwise happy community should prompt every mother and father of growing youngsters to ask themselves the following questions:

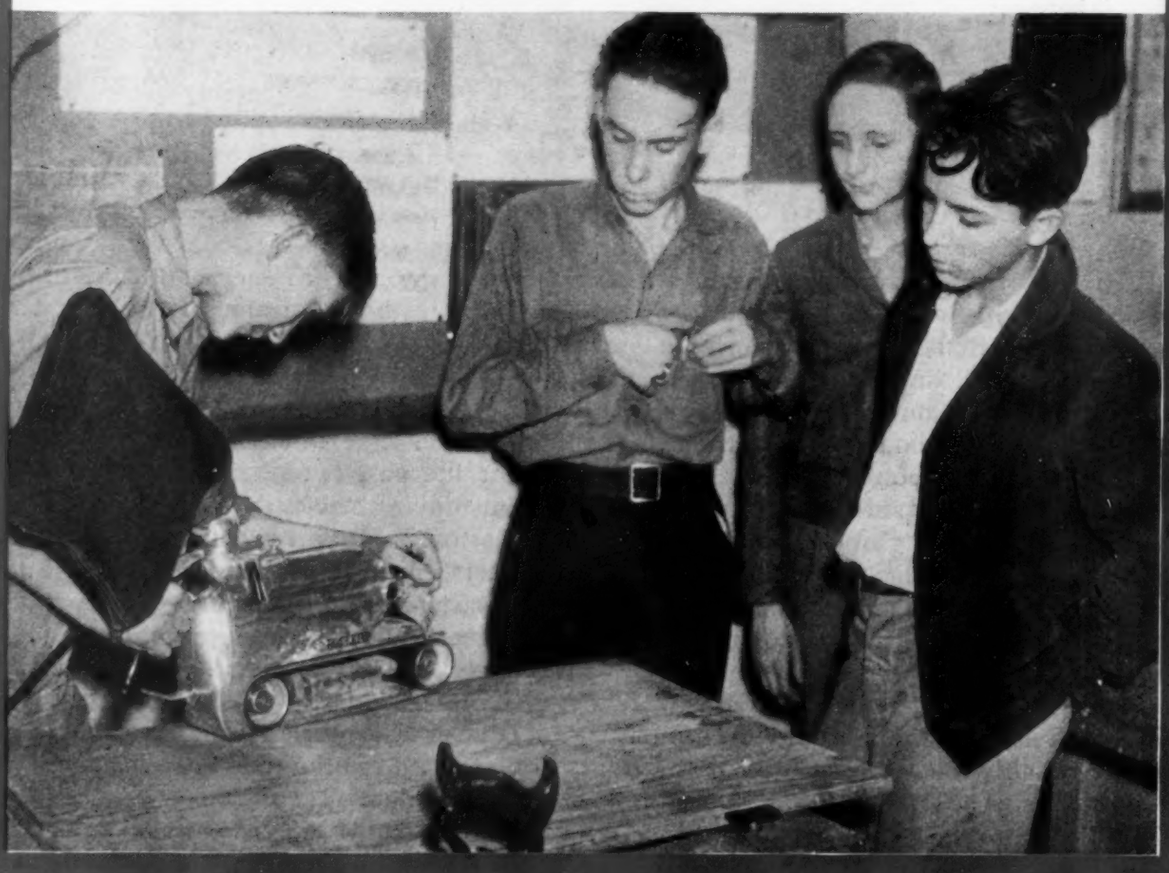
What do I actually know from personal observation or reliable report about fire conditions at the children's school? Is the building proof against flames? Exactly what dangers of conflagration are there? Is the school ever inspected for fire hazards, especially those that might accumulate over a period of time? On the answers to these questions, and the subsequent actions of parents, hinges the safety and future happiness of thousands of children and grown-ups, according to David J. Price, Ph.D., ace fire prevention expert of the federal government.

For the past twenty-five years Dr. Price has been studying causes and prevention of fires and explosions. His investigations have taken him to the scenes of small fires in addition to those of catastrophic proportions, always with the aim of ascertaining the cause and prescribing a remedy so that a similar disaster will not occur elsewhere.

One of the more recent disasters Dr. Price investigated for the federal government was the New London, Tex., school explosion which brought death to 293 pupils and teachers. Spurred by this tragedy he has made a special study of 875 school fires and blasts, about which

The best and most modern equipment was available to students of the ill-fated New London school. These photographs were taken only a few weeks before the explosion.

This innocent looking sanding machine (below) is thought to have caused the explosion. When its switch was thrown, an arc was formed, setting off leaking gas which had already spread underneath the entire main building.



comparatively accurate information is available. The results of this study have been interpreted by Dr. Price in the light of his twenty-five years' experience in coping with these hazards, and he has evolved a set of rules designed to remove, or reduce to the lowest possible minimum, the dangers of this sort existing in many of our schools.

"Most of these 3,000 annual school fires are extinguished without resulting in loss of life or serious material damage," Dr. Price asserted. "However, this large number of itself points to an overwhelming need for instituting far more stringent fire safety regulations. The primary task in this connection is prevention, and with the exercise of proper care, virtually all of these fires can be stopped before they ever have a chance to get started.

"No matter how insignificant the blaze, or how quickly it is extinguished, the potentialities of every one of them are not pleasant to think about. In many cases, were the fire to break out at a different time of day, or were but a few more minutes to elapse before its discovery, thus allowing the blaze to gain headway, what doubtless is an exciting incident to the children might easily turn into a devastating holocaust, consuming life and property and bringing despair to families throughout the community."

Searching through a sheaf of reports that lay on his desk, Dr. Price extracted one from the fire department of a southern city.

"This concerns a school in which 195 children had sleeping quarters on the fourth floor," he said. "The children fortunately were at supper when fire broke out, so all were saved. A few hours later these youngsters would have been trapped in their beds as the stairways became flaming shafts. There were no fire escapes by which they could have fled.

"There are some 250,000 school buildings in the United States," Dr. Price continued. "Among this number there is no question but that many, even of the comparatively modern structures, present definite fire hazards. Some of these dangers are built in, others, like waste paper and trash, tend to accumulate over a period of time. In order to remove or minimize these risks constant watch is necessary.

"Right here is where parents have not only a golden opportunity but an obligatory duty. They must do their part by insisting that the basic principles of a fire safety program be adopted and continued as a routine procedure on the part of every school board and school throughout the country. Furthermore, they must continue an active interest in this program, once it has been inaugurated."

Parents' active participation is paramount, according to Dr. Price, for as a result of his study he has concluded that many educational and municipal authorities believe there is little or no danger of school fires and that no special precautions against such contingencies are necessary. If they believe otherwise, they have failed to adopt the necessary preventive measures. "How otherwise may we account for the large number of school fires?" Dr. Price asked.

"This attitude of security is anything but conducive to the real safety of the growing generation," he continued. "A community may boast of fireproof schools, and yet there may be hazards present or in the process of formation that remain completely overlooked. Certainly the New London school was a fine example of brick, concrete and steel construction, but almost 300 persons are dead.

"Beyond question, no one is more interested in the safety of our school children than the parents of those children. But if they are unwilling to take the trouble of actively fostering a fire safety program, they cannot expect public officials, convinced of the adequacy of their precautionary measures, to take any extra steps."

As is frequently the case in important matters, the fire safety program set up by Dr. Price is simple. Common sense principles, so often overlooked until it is too late, are its foundation. The first point calls for immediate and, thereafter, monthly inspection of all school buildings with special attention given to basements, storage rooms and dead spaces under class rooms. Unless care is taken, these spaces become centers of accumulation for trash, such as waste paper, rags and other refuse, which are highly combustible.

"Records of grade and high school fires show that one-third originate in boiler rooms and unused dead space in basements," Dr. Price pointed out. "An additional 7 to 8 per cent start in storage rooms, under stairways, in waste-paper rooms and chutes, locker rooms, coal bins and other spots not often visited. On inspection all trash accumulations and any other possible fire hazards should be removed immediately and care exercised that no further accumulations take place.

"This periodic inspection should be made by a committee of four persons: the custodian of the building, a teacher of the school, a member of the local fire department and, last but by no means least, a parent. In the final analysis the parents have the largest stake in the school. What might satisfy the janitor, perhaps the teacher and maybe even the member of the

fire department might not satisfy parents. So it is up to them to see that these inspections are made to their satisfaction, are made regularly and that any recommendations resulting from inspections are carried out to the letter. Eternal vigilance is not only the price of liberty but also of safety, and parents, either individually or collectively, will do much for the safety and happiness of their children by keeping a watchful eye on these inspections and other points of the program as well." In some communities it is possible that laxity might develop on these tours if the committee were composed of but three members, all on the public pay roll. For that reason, as well as for others equally potent, parent representation and continued watchfulness are essential.

"Interest in these inspections must remain alive," Dr. Price continued. "Children put their trust in parents and teachers and, in fairness to them, teachers, parents and officials must see that these safety measures form a continuing activity. A false sense of security is the only thing gained from a haphazard or discontinued program."

The second point of Dr. Price's fire prevention program calls for examination of plans for new school buildings and additions to old ones. These should be inspected by a competent person or committee, and every possible fire hazard eliminated before construction starts. This method is much less costly than removing such dangers after work has begun or after the building is completed. All heating and lighting equipment, appliances and similar installations, should be put in by competent workmen. And before a new building or an addition to an old one may be occupied, all installations must be inspected to see that they are 'shipshape.'

"Insistence by parents on such examinations would be especially beneficial in cases of suburban and rural consolidated schools," Dr. Price stated. "Too often expert safety supervision and inspection are not required by law to the same degree as in the larger cities. As a result, definite fire and explosion hazards may be present from the first day of occupancy. After this initial inspection before occupancy, there would follow the monthly tours by the committee.

"The third safety rule is the need of separating manual training operations, motor repair work and similar types of study in buildings from the main class room structure. Work of this kind calls for installation of power lines which, even under ideal conditions, are definite hazards. Should they be handled carelessly in any way, results could be extremely serious. Short circuits, crossed wires, sparks and many other dangers lurk in electric power lines."

Point number four in Dr. Price's program is the elimination of garage space for school buses in basements of classroom buildings. This practice of housing automobiles directly under floors occupied by small children has become fairly widespread in suburban and rural communities where consolidated schools have been built. Under this practice gasoline and other highly combustible substances are brought into the building and, not only does this add another point of origin for fires but, should a blaze start in some other portion of the building, with such fuel present the danger to the children is increased many times. School garages should not even be connected with classroom buildings, but rather built at some distance from these structures.

Addition of a malodorant to odorless gas where this is used for school purposes comprises the fifth point of the program. Though this would not apply to many districts, special care must be exercised by such schools as are affected in order to avoid a duplication of the New London disaster, Dr. Price asserted. In this connection, he stated, there is great need for developing more adequate warning devices to indicate the presence of gas in explosive quantities, despite the addition of a malodorant.

"Such gas may collect in dead and unused spaces under class rooms and in the walls of school buildings, as happened in New London," Dr. Price said. "Adequate automatic warning devices in that case doubtless would have prevented the disastrous loss of life and probably the destruction of the building.

"Sixth and last of the rules is the need of holding regular fire drills under expert supervision. To many the inclusion of this point will seem perhaps foolish, as such drills are regular procedure in most schools. But it is surprising how much this essential step is neglected, especially after the first drill of the school year has been held. *(Continued on page 928)*

FIRE PREVENTION WEEK

From October 8-14, this nation will observe Fire Prevention Week. Now officially noted by Presidential proclamation, it is the anniversary of the great Chicago fire, Oct. 9, 1871.

COMING in the FUTURE

HAVE YOU EVER STOPPED TO THINK how many broken bones, torn muscles and lives there are lost in that great American sport—football? Although in the last few years a consistent effort has been made to reduce many of these altogether unnecessary injuries, they are still too numerous for the pleasure of patrons and parents whose boys are out there on the field playing. Alfred E. Parker, of the physical education department at the Berkeley (Calif.) High School, contributes an article to the November HYGEIA that will make you acutely aware of the revolt that is going on among high school administrators, physical education teachers and others to eliminate one thing or the other: the hazards of football or the game itself! See "The Revolution in American Football."

⬇

THE SUBJECT OF HORMONES, or internal secretions, has a special appeal to most persons, perhaps because the hormones really have some of the powers which superstition has always ascribed to the sorcerer's potion. By delicate rearrangements in balance, they regulate the individual in his period of growth, through the great crises of puberty and menopause and through the gentle decline of senescence. But when their interaction becomes in any way upset, the results may be spectacular. Leona M. Bayer, M.D., of the Stanford University School of Medicine, clarifies the dramatic potentialities of these glands in a fascinating article called "Hormones: the Magic Regulators of the Body."

⬇

TEACHERS ARE OFTEN AT SCHOOL when they should be absent! Mere presence in school does not signify fitness for work, and rather than lose a few days' pay, they drag themselves out while feeling far below par. "There should not be any insistence by school officials on minimum or on uniform absence rates on account of illness," declares James Frederick Rogers, M.D., who is in the Office of Education of the U. S. Department of Interior at Washington, D. C. Dr. Rogers supplements his study of "The Health of the Teacher" with an interesting set of "Eleven Commandments for Teachers." This article should be read by every teacher and school administrator.

⬇

DOES YOUR CHILD BALK at his daily dose of cod liver oil? If so, here is just the article you should read. Or, if you anticipate having to give him some vitamins in this form, you should know how to do it in order to have the child swallow it with the least fuss and greatest benefit. Irving J. Wolman, M.D., contributes directions for this feat next month that are at once specifically applicable to children of any age who must take cod liver oil.

⬇

OTHER FEATURES will be "200 Million Colds" by Robert Toubib; "Adjustments in Marriage" by Neil T. McDermott, M.D.; "The Story of Food" by E. F. Kohman, Ph.D., and "Insomnia and Night Terrors" by William I. Fishbein, M.D.

Nation's Schools

Cleanliness is learned early in some schools.

TRADITIONAL EDUCATION

Is health education essential? asks
MARION OLIVE LERRIGO

"I REGRET that I cannot accept your invitation to appoint a teacher to serve on the health education curriculum committee." The principal of the Elm Avenue School was signing his letters. "None of our teachers can spare the time, since our program is already crowded, leaving too little time for essential educational activities. As our school is in a good neighborhood where the children are well cared for by their parents, we have very little need for health teaching."

The bell clanged for the noon recess, and in the fifth grade Bobby Hammond prepared to eat his lunch. He went downstairs to the basement where the washrooms were located. There were washbasins but no soap or towels. Bobby did not even moisten his fingers in an excuse for handwashing. Back in his classroom, he began eating at 7 minutes past 12 and swallowed the last bite at 12:16.

Then he joined a group of boys on the playground who were earnestly discussing the tabloid news story of a 13 year old unmarried mother. Two of the boys ingeniously combined sparse facts with hair-raising physiologic fiction to explain how the girl happened to have the baby and how she might have avoided it. Bobby had a sinking feeling in the pit of his stomach at the thought that his 6 year old sister might have an unwanted baby.

That afternoon, Bobby's teacher was so harassed by the pressure of "essential educational activities" that she neglected to adjust the window shades, and no one had thought of teaching the children to adjust them. The glare gave Bobby a headache, which spoiled his pleasure in

the ball game after school and made him cross at supper.

The story of the Elm Avenue School is worth recording, because it is true and because it is one of many schools where even now health education has not won equal recognition with the three R's. For this failure of health education a kind of unrecognized intellectual snobbery is to blame, a heritage from our educational past.

By tradition, we think of education as something that is received from books. Health obviously cannot be gained from books, although books may inform us how to protect health. "Essential educational activities" must deal with training the mind, and the "real" task of education is intellectual, according to tradition. So train the mind we will, whether or not the mind is in a fit condition to be trained. We may deny the influence of this strong hereditary attitude; yet how else explain the complacent disregard of the child's biologic nature and organic needs, which so many schools still display?

Listen to the Report of the Regents' Inquiry on The School Health Program in the state of New York, published in the latter part of 1938. In 60 per cent of the schools, seats were not adjusted to fit the children. Almost one third of the schools showed, in midwinter, classroom temperatures of 75 degrees and over. Temperatures of 90, 92 and 102 degrees were observed in three schools. In 13 per cent of the schools, the mean illumination was less than the accepted standard of 10 footcandles of light, and in about nine out of ten schools some of the children had to work with less than that illumination. Sanitary bubble fountains were lacking in one fourth of the schools, and in 13 per cent there were no handwashing facilities near the toilets. There was no soap in 29 per cent of schools, and no towels were found in one fifth of the schools examined.

The report also indicates the distance to be covered in the grades before health education receives attention comparable with that given the traditional school subjects. Health instruction is very creditable in the first three grades; but in the fourth, fifth and sixth grades, it is "thin in content," and generally on the same level as in grades one to three. Imagine an up-to-date school teaching arithmetic in the fourth, fifth and sixth grades on the same level as in the first three grades!

In the junior high school, there is some health instruction in general science which reaches all junior high school students. In some schools there is a "slender" course required in hygiene, which is rarely effective. There is some incidental health teaching in the social studies and in home economics. "In the senior high school there is no hygiene which reaches all students."

It is time to look at our lurking educational snobbery in full daylight. The Regents' Report would make this attitude responsible for the most serious defects in the school health program of New York State. Speaking of leadership in the state educational department, the report says, "At Albany, as in the local school areas, the most serious handicap of the school health program is its lack of integration with the educational program as a whole. It is an alien element, forced into the system by outside pressure groups, not accepted with any real conviction and, as an inevitable result, itself tinged with a spirit of defensive self-assertion."

We see that health, in theory one of the first objectives of education, is in practice regarded as "an alien element . . . not accepted with any real conviction."

No one today is expressing the traditional attitude toward education more forcefully than President Robert M. Hutchins, of the University of Chicago. He has formulated a plan for a general education, claimed to be suitable for every one, which is based on the belief that "if education is rightly understood, it will be understood as the cultivation of the intellect." One practical consequence of accepting this traditional belief is that when he describes his plan, President Hutchins says, "We have excluded body building and character building." Other practical results will be seen in what is included and what omitted from the proposed ideal general education program, which is "a course of study consisting of the greatest books of the western world and the arts of reading, writing, thinking, and speaking, together with mathematics, the best exemplar of the processes of human reason." Where is science? Where any arts but those of language?

A more specific application of this philosophy is illustrated in President Hutchins' statement that "sex, safe driving and table manners all need to be taught somewhere, but the schools have a limited amount of time, and they require all the time they have to develop the minds of their students."

Without questioning the vast importance of teaching individuals to think and reason clearly, many educators challenge the definition of education as the cultivation of the intellect. The limits of that definition are too small to admit the whole person when he goes to school.

A man's intellect does not operate separately from the rest of him. It both acts on and is acted on by his emotions, desires, fears,

pleasures, antipathies and conditions of body chemistry which are related to his temperament, character and health. The cultivation of the intellect irrespective of these human, unintellectual urges and conditions will be only partially effective. It will not prepare the individual to act as a whole, in control of all his driving forces. For this reason, many educators feel that they must define the function of education no less broadly than the *cultivation of the whole man* at his best.

When any part of man's organism is out of order, whether mind or body, both mind and body are likely to be disturbed. The use of metrazol and insulin in shock treatment of certain mental diseases dramatically points to the close relationship of mind and body. Helen Keller's triumph over the loss of sight and hearing reminds those who see her of the debt the mind owes as a rule to eyes and ears. All of us know the difficulty of thinking clearly and easily when the common cold blocks breathing and causes a splitting headache. Doctors, and the patient's family too, alas, know that a jaundiced body is accompanied by a jaundiced disposition.

Since the knowledge of how to protect one's health is not inborn, the individual must go through a process of health education. Surely the schools can take time for this process which basically protects the child's health and also safeguards his capacity for intellectual development.

If one is tempted to yield to the argument that health education is unessential, it is arresting to reflect that health education is not the invention of any one person; it is the product of the thinking of many minds through many centuries.

Our present schools trace their ancestry to Greece and Rome. The world rightly recognizes the intellectual debt it owes to Greek thinkers, and we may also profit by inquiring into their appreciation of the value of physical well-being, shown in the time and attention given to games. With our modern knowledge of the sciences, the Greeks would have developed a vigorous program of health education.

No such widespread interest in physical well-being was shown in the Roman educational activities, and the influences of the early Christian era did not encourage it. For centuries most of the schools were in the monasteries, and later it was not easy to erase the stamp of the monks' religious philosophy and interest in heavenly and other-worldly affairs. A curriculum of literature and languages was traditional by the seventeenth century, and it was assumed that by such studies mind and character were disciplined. There was no place for health education in such schools.

During the Renaissance and in following centuries there developed a more liberal conception of education, with recognition of the place of the physical, the esthetic, the moral and the social interests of life in education. This liberalizing of educational thought is one of the reasons why health education is possible today.

In the early seventeenth century, the spirit of scientific inquiry began to disturb the comfortable and settled ease of the scholars. Eventually the development of scientific activities outside of the schools upset the composure of schoolmen enough so that they gradually admitted to the curriculum such subjects as geography, biology, physics and chemistry. The first English elementary textbook on physiology appeared in 1837. Horace Mann vigorously advocated the teaching of this subject, and in 1850 the state legislature of Massachusetts made its teaching compulsory in elementary schools. Physiology was the second subject of scientific character to be generally introduced into the public schools of the United States. Geography was the first.

The advances of psychology, the scientific study of all phases of child nature and the development of progressive educational theory have also opened the way for our modern interest in health education. Moreover, scientific discoveries have shown us that prevention of disease is to some extent the problem of every individual, and this fact has strengthened the demand for health teaching in schools.

But health education has not yet found its real place in the sun. Is this partly because too many health education programs have wasted energy on trifles and have ignored matters of vital interest? The fortunes spent by our citizens on self prescribed "patent medicines" show that they have not yet learned how disastrously wasteful of both health and money such expenditures may be. In New York City, the decision was made in 1938 that junior high school students need know no more of reproductive processes than is involved in a study of the birds, the bees and the flowers—although the entire country is engaged in a campaign to eradicate venereal disease, which is being widely publicized in magazines and newspapers that may be read by children of even elementary school age.

Lip service has been given for more than twenty years to the famous declaration of the "Cardinal Principles of Secondary Education," which listed health first among the objectives of education. Yet most *(Continued on page 959)*

***QUESTION:**—Whose advice should I first seek concerning my eyes?*

ANSWER—*Your Family* *Physician's*

Q. *Who will the Family Physician recommend?*

A. Your Family Physician will recommend an *Eye Physician (oculist).

Q. *Why an Eye Physician?*

A. Because the Eye Physician with his medical training knows the eye in its relation to the body. He can determine whether headaches, nervous debility, etc., are due to eye trouble or have their origin elsewhere. When glasses are necessary he can prescribe them exactly for the corrective or relieving effect that is required.

Q. *Who should fill my prescription for glasses?*

A. Physicians recommend a Guild Optician—because the making and fitting of glasses calls for the skill of a master craftsman. When your glasses are made by a Guild Optician, you are sure that they will be exactly as your Eye Physician prescribed them.

Q. *Why should I give my eyes this double check?*

A. You should give your eyes this double check for eye-health as well as accuracy of vision. When your glasses are prescribed by an Eye Physician (Oculist), your eyes have the best attention that medical science has to offer. When your glasses are made and fitted by a Guild Optician, your eyes have the best care that optical science and skilled craftsmanship can offer.

Guild Opticians

Are Recommended by Physicians

FOR DEPENDABLE GLASSES AT ECONOMICAL PRICES

An authoritative book on care of the eyes.

Write to or call at nearest Guild Optician for your copy

LOOK FOR THIS SIGN

Guild Opticians

Are Recommended by Physicians

ARIZONA
- **Tucson**
  - TUCSON OPTICAL SERVICE

CALIFORNIA
- **Los Angeles**
  - HEIMANN, MONROE & JONES (2 Stores)
- **Oakland**
  - FRANKLIN OPTICAL COMPANY (2 Stores)
- **Sacramento**
  - CHINN, HAROLD
- **San Francisco**
  - TRAINER-PARSONS OPT. CO.
  - JOHN F. WOOSTER CO.

COLORADO
- **Denver**
  - SYMONDS-ATKINSON OPTICAL CO.

CONNECTICUT
- **Bridgeport**
  - WAKEMAN & ANDERSON
  - THE HARVEY & LEWIS CO.
  - FRITZ & HAWLEY
- **New Haven**
  - THE HARVEY & LEWIS CO.
  - FRITZ & HAWLEY
- **Hartford**
  - LOWRY & JOYCE
  - THE HARVEY & LEWIS CO.
- **New Britain**
  - THE HARVEY & LEWIS CO.
- **Waterbury**
  - WILHELM, INC.

DELAWARE
- **Wilmington**
  - THE BAYNARD OPTICAL CO.
  - CHAS. M. BANKS OPTICAL CO.

DISTRICT OF COLUMBIA
- **Washington**
  - EDMONDS, OPTICIAN
  - FRANKLIN & CO.
  - HUFFER-SHINN OPTICAL CO.
  - TEUNIS BROTHERS

FLORIDA
- **Miami**
  - HAGELGANS OPTICAL CO.

GEORGIA
- **Atlanta**
  - WALTER BALLARD OPT. CO. (3 Stores)
- **Macon**
  - W. B. KEILY, OPTICIAN

ILLINOIS
- **Chicago**
  - ALMER COE & CO.
- **Evanston**
  - ALMER COE & CO.

KENTUCKY
- **Louisville**
  - SOUTHERN OPTICAL CO. (2 Stores)

MARYLAND
- **Baltimore**
  - BOWEN & KING, INC.

MASSACHUSETTS
- **Boston**
  - CHILDS, CARL O.
  - MONTGOMERY FROST CO. (3 Stores)
  - ANDREW J. LLOYD COMPANY (3 Stores)
  - PINKHAM & SMITH CO. (2 Stores)
  - POLLARD, RALPH L.
- **Springfield**
  - CLARKE, ALBERT L.
  - THE HARVEY & LEWIS CO.
- **Waltham**
  - BENNET R. O'NEIL, OPTICIAN
- **Worcester**
  - JOHN C. FREEMAN & CO.
  - THE HARVEY & LEWIS CO.

MINNESOTA
- **St. Paul**
  - ARTHUR F. WILLIAMS

MISSOURI
- **St. Louis**
  - GEO. D. FISHER OPTICAL CO. (2 Stores)
  - ERKER BROS. OPTICAL CO.
  - JOHN A. GUHL, INC.

NEW JERSEY
- **Asbury Park**
  - ANSPACH BROS.
- **Atlantic City**
  - FREUND BROTHERS
- **Camden**
  - PELOUZE & CAMPBELL
- **East Orange**
  - ANSPACH BROS.
  - DEUCHLER, HAROLD C.
- **Elizabeth**
  - BRUNNER'S
- **Englewood**
  - HOFFRITZ, FRED G.
- **Hackensack**
  - HOFFRITZ & PETZOLD
- **Montclair**
  - STANLEY M. CROWELL CO.
  - MARSHALL, RALPH E.
- **Morristown**
  - JOHN L. BROWN
- **Newark**
  - ANSPACH BROS.
  - REISS, J. C.
- **Plainfield**
  - GALL & LEMBKE
- **Summit**
  - ANSPACH BROS.
- **Westfield**
  - BRUNNER'S

NEW YORK
- **Albany**
  - MARSTON, HOWARD E.

Guild Opticians

Are Recommended by Physicians

NEW YORK—Continued
- **Bronxville**
  - SCHOENIG & CO., INC.
- **Buffalo**
  - BUFFALO OPTICAL CO. (2 Stores)
  - GIBSON & DOTY
  - FORREST OPTICAL CO.
  - PRECHTEL OPTICAL CO.
  - SCHLAGER & SCHLAGER
  - FOX & STANILAND, INC. (2 Stores)
  - URSIN-SMITH GUILD OPTICIANS
- **Kenmore**
  - BUFFALO OPTICAL CO.
- **New Rochelle**
  - BATTERSON, JOHN P.
- **New York City**
  - LUGENE, INC. (2 Stores)
  - E. B. MEYROWITZ, INC. (6 Stores)
  - FRYXELL & HILL
  - HARTINGER, EDWARD T.
  - HOAGLAND, J. S.
  - CLAIRMONT & NICHOLS CO.
  - GALL & LEMBKE
  - PICKUP & BROWN, INC.
  - H. L. PURDY, INC.
  - SCHOENIG & CO., INC.
- **Brooklyn**
  - BADGLEY, H. C.
  - E. B. MEYROWITZ, INC.
  - DOUDIET, ERNEST A.
  - J. B. HOECKER, INC.
  - J. H. PENNY, INC.
  - A. M. SHUTT
- **Hempstead**
  - C. WALTER SEE
- **Jamaica, L. I.**
  - HANSEN, JOHN
- **Rochester**
  - WHELPLEY & PAUL
  - WALDERT OPTICAL CO.
- **Schenectady**
  - DAY, JAMES E.
  - OWEN OPTICAL COMPANY
- **Syracuse**
  - CARPENTER & HUGHES
  - CLOVER-WHITE OPT. CO.
  - EDWARD HOMMEL & SONS
- **White Plains**
  - JOSEPH E. KELLY
  - CLAIRMONT & NICHOLS CO.

OHIO
- **Cincinnati**
  - ETTER BROTHERS
  - KOHLER & CO.
  - SOUTHERN OPTICAL CO.
- **CLEVELAND**
  - E. B. BROWN OPTICAL CO.
  - HABERACKER OPTICAL CO.
  - REED & McAULIFFE, INC.

OREGON
- **Portland**
  - MOOR, HAL H.

PENNSYLVANIA
- **Bethlehem**
  - PRICE, WILLIAM H.
- **Erie**
  - HESS BROS.
  - WILLIAM J. MAGAY CO.
  - ERIE OPTICAL CO.
- **Philadelphia**
  - JOSEPH C. FERGUSON, JR., INC.
  - WALL & OCHS
  - YARNALL & BENDELL
  - DOYLE & BOWERS
  - A. W. BRAEUNINGER, INC.
  - WILLIAMS, BROWN & EARLE, INC.
  - JOHN W. CLEARY
  - CHAS. SIGISMUND CO.
  - BONSCHUR & HOLMES, INC.
  - J. E. LIMEBURNER CO.
  - FELDENS & KIENLE
  - WILLIAM J. SCOTT, INC.
  - FRANK A. MORRISON
  - MULLEN & WOLF
  - MULLER & FENTON
  - BENDER & OFF
  - WELSH & DAVIS
  - STREET, LINDER & PROPERT
  - WILLIAM M. WEBER SONS
  - THE WM. F. REIMOLD CO.
- **Pittsburgh**
  - GEO. B. REED & CO.
  - DAVIDSON & CO.
  - DUNN-SCOTT CO.
  - GEORGE W. HAAS, INC.
  - CHARLES F. O'HANLAN
  - SHALER & CRAWFORD, INC.

SOUTH CAROLINA
- **Charleston**
  - CROWE OPTICIANS—GATLIN, SUCCESSOR

TEXAS
- **Beaumont**
  - SCHWENK, F. W.

VIRGINIA
- **Norfolk**
  - E. E. BURHANS OPTICAL CO., INC.

WASHINGTON
- **Seattle**
  - CHARLES R. OLMSTEAD, INC.

CANADA
- **Montreal**
  - R. N. TAYLOR & CO., LTD.
- **Ottawa, Ontario**
  - SUTHERLAND & PARKINS
- **Toronto**
  - FRED SHORNEY, LTD.
  - J. C. WILLIAMS (2 Stores)
- **Vancouver, B. C.**
  - HALE OPTICAL CO., LTD.
- **Winnipeg, Manitoba**
  - RAMSAY, ROBERT S.

***ASK ANY GUILD OPTICIAN FOR THE NAME OF AN EYE PHYSICIAN IN YOUR VICINITY**

DOLLAR-A-MONTH DOCTOR

(Continued from page 880)

sulting in difficult cases with other physicians means to you? *It means your family doctor may at a word command the maximum medical skill of his entire community and, if need be, concentrate at your bedside all the accumulated knowledge and curative skill of his profession.* That is the one paramount purpose for the association of doctors called organized medicine!

Your child calls out in the night. The plea in his voice startles you from sleep. You leap to his bedside. Alarm clutches your heart as your hand on the little head feels the heat of fever. Perhaps your child goes into a spasm, livid and gasping for breath. Into the telephone you implore: "Hurry, doctor, hurry!"

The physician you summon in that emergency, who may come with only trousers and coat donned hastily over his pajamas and whose arrival you so gratefully welcome, enters your home not as just one man. Through his alliance with his county medical society, through the dictates of his ethical principles and the consultations of his fellow physicians, he may bring to the bedside of the critically ill the total art of healing which men of medicine have proved through the years. That is something I, for one, never realized in its fullest implications until my own family doctor explained the practical applications of his Principles of Ethics.

As my family doctor explains it, *organized medicine is opposed to any change in the medical system that will surround a patient or a group of patients with any barrier limiting the medical skill that may be summoned to the bedside of the critically ill.* Those barriers may be any form of contract practice that includes any one of the conditions considered unethical in stipulations of the Principles of Ethics.

Section 3 of Article VI in the Principles of Medical Ethics considers contract practice and defines it as "an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision or individual, to furnish partial or full medical service to a group or class of individuals on the basis of a fee schedule, or for a salary or a fixed rate per capita." That, you see, includes health insurance. The principles go on to explain:

> Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: 1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract because of any of its provisions or practical results is contrary to sound public policy.

Note those points carefully. They are the bone of contention in the prosecution of organized medicine as a trust. Can you see anything nefarious in the doctors refusing to recognize a health insurance plan in which they believe the conditions of employment make it impossible to render adequate service to the patient?

Perhaps the most illuminating sentences in the statements of the Principles of Ethics concerning contract practice are those which state:

> Each contract shall be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole.

In accordance with the tenets of their ethical principles, the doctors demand there be no encroachment on the patient's right to be treated by the doctor of his personal choice in whatever change may be made in the medical system. They know there is nothing more distressing in illness than to have a helpless patient convinced in his own mind he is being treated by the wrong doctor. The physicians insist the relationship between doctor and patient must be maintained on a voluntary, confidential basis. They hold it is the inalienable right of the patient to protect himself, according to his own lights, by obtaining the service of the physician in whom he has confidence.

When the son of the President of the United States needed surgical care not long ago, he did not seek the service of the physicians employed in the health insurance plan endorsed by a governmental bureau. He exercised his privilege of a free choice of doctors and travelled half way across the continent to obtain the service of the surgeon in whom he had the greatest confidence.

Undoubtedly the clinic the President's son attended represents the maximum medical skill of its community. But it is interesting to note that doctors affiliated with that institution support a claim of the family doctors that no clinic, however famous, is able to offer a greater concentration of medical skill than may be found among the modernly educated doctors in any metropolitan center in this country. All that highly specialized skill is at the command of the ethical family doctor through consultation.

The compulsory health insurance plan proposed in the National Health Program made no provision for the medical care of indigents. The medical profession always has assumed the responsibility for providing medical care for the poor. A section in the Principles of Ethics states:

> The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for unremunerated services.

There is no accurate way to evaluate the amount of charity work doctors do or compute the monetary value of medical care, for who can put a price on life, health and happiness? It has been estimated that the doctors of medicine give the indigents of this country more than $1,000,000 worth of medical services a day, making a total of $365,000,000 a year in voluntary contributions of time and skill. Is it any more logical for the doctors to do that than it would be for the grocers to contribute a like amount of food to feed the undernourished?

The first complaint of their charity burden was voiced by the doctors at the latest meeting of the House of Delegates of the American Medical Association when a resolution was adopted stating the principle that the care of the indigent sick rightfully belongs to society as a whole, not to the small fraction of the population the doctors comprise.

That resolution was adopted because the medical profession believes if Washington bureaucrats

invade the private practice of medicine and expend millions of dollars of public money to give medical care to low income groups, they also should make provisions where the need may be greater and take up the burden of the indigent sick, which the doctors have borne alone.

The entire economics of medicine is based on a charitable principle. The doctors charge for their services in accordance with the patient's ability to pay. The rich man pays a fat fee for his medical care. The man of lower income is charged what he can afford to pay without undue sacrifice of necessities. The man with no financial resources is treated without cost. But, mark this well, under our American system each receives the same quality of service from the ethical doctors of medicine.

WHO PROFITS BY STATE MEDICINE?

Members of the medical profession would profit financially by the institution of compulsory health insurance in this country. Those with the least profitable private practice, which may indicate inferior training and experience, would be the first to seek political appointments in a system of state medicine that would assure them a steady income from tax funds. *But organized medicine opposes compulsory health insurance even in the face of pecuniary loss to the profession as a whole, because it is convinced that any such political system will lower the quality of the medical care offered the individual patient.*

The revolt against the American system of medicine comes at a time when there is an unprecedented renaissance in the medical profession itself. Without any publicity fanfares, the great root system of American medicine is rapidly developing means to meet the needs of our changing social order.

Under the practice of modern medicine, which has grown to require the equipment of hospitals with their sterile surgeries, x-ray departments and technical laboratories for the maximum service to the patient, hospital costs have become the biggest immediate expense in serious illness or injury today.

Working on that problem together, the member institutions of the American Hospital Association and the county medical societies throughout this country have developed in the last few years nonprofit group hospitalization plans which now guarantee complete hospital service on a low cost prepayment basis for over 3 million Americans and their dependents.

These plans provide from 21 to 30 days of hospitalization a year, more than enough to meet average needs, and each enrollee pays from 75 cents to $1.50 a month to secure complete hospital benefits for himself and his family in the hospital of his choice among the approved institutions in his community.

On May 1, 1939, seventy cities in the United States had community group hospitalization plans in operation. Other cities are following suit as fast as possible, and enrolment is leaping upward by the tens of thousands a month. A New York City community plan enrolled its millionth member in December. A Philadelphia plan enrolled 25,000 members in its first thirty days of operation.

It is significant to note that this great forward step in practical social service has established a remarkable success record *without the aid of any governmental bureaucracy, without the expenditure of $1 of public funds, without political pressure of any kind and without commercial advertising or publicity appropriations.* These group hospitalization plans, promoted by private initiative under the sponsorship of organized medicine, pay no dividends to stockholders, hire no large staffs of executives, pay no commissions and occupy no marbled halls; but they are giving the public a security from the economic losses of illness that was never known before in this country.

But group hospitalization is only the first step in the progress toward a practical socialization of medicine sponsored by our family physicians. Acting under the recommendations of the American Medical Association's House of Delegates, county and district medical societies are developing programs to meet local requirements and are formulating low cost, nonprofit insurance plans on the indemnity principle to cover the whole cost of illness.

I, for one, consider what physical disabilities I may have a purely private matter. I don't care to have my illnesses card-indexed in any governmental bureau, nor do I want my medical care dependent on the unreeling of any governmental red tape. When I am sick I want to be treated on a private, confidential basis by the family doctor on whom I have always relied in every kind of difficulty. I cannot be persuaded any other kind of medical care is a bargain, no matter how inexpensive it may be.

Before we stand with indifference and see our family physicians converted into dollar-a-month doctors—who may be permitted to give us service worth only the few pennies of the bargain price — we should consider some broad principles stated by one of America's venerable educators.

When the head of Johns Hopkins University speaks, the American people may do well to heed. In his annual report for 1938 to the board of trustees, Dr. Isaiah Bowman, president of Johns Hopkins University, said:

> In times of intense conflict of opinions concerning democratic processes and goals . . . there are both gains and losses. When quick decisions are taken and rapid adjustments are made, the charlatan finds his opportunity in the resulting confusion. It is part of the business of management to prevent the waste of that which has been proved to be good.
>
> If, unhappily, a democracy set up the ideal of state dominance and individual complacency, if it set the pattern of the average above tolerance for variation in the person, if the infinite variety of man be lost in devotion to a "system," democracy will mean stupefying uniformity. It will mean the end of creative thought except within narrow limits of action. Talent must also find a place if democracy is to improve. The best must also have a chance.

I want the best to have a chance in any doctoring that may be done for my family. I believe the best will be offered in whatever changes in the medical system are developed under the Principles of Medical Ethics by our family doctors. They have not failed us yet.

The American people should not be willing to discard a medical system that has made them the healthiest nation in the history of man.

A talk with your family physician will convince you, too, that the ethical doctors are fighting our fight, as patients, in resisting state medicine.

CORRECTION

Under the x-ray photograph of a cystoscope, page 803, in the September issue, the statement that an opaque fluid was injected into the blood stream is incorrect. This fluid is injected through the apparatus.

PIE *is another name for Food Energy*

EGGS, milk, butter, sugar, flour . . . an infinite variety of such protective foods as apples, peaches, prunes, apricots, raisins, and berries. . .

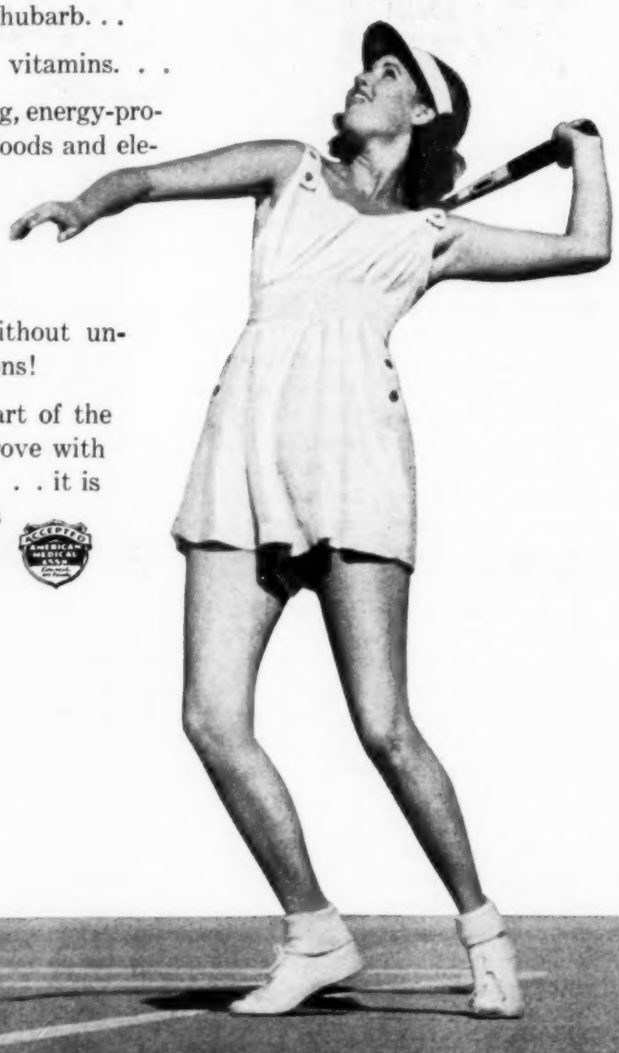
Pumpkin, squash, rhubarb. . .

Minerals, proteins, vitamins. . .

All of these nourishing, energy-producing, body-building foods and elements are to be found under the crisp, golden pie crusts. . .

What a wealth of nourishment pie offers without undue tax on normal digestions!

Best of all, pie is *one* part of the diet that patients will approve with whole-hearted enthusiasm . . . it is one of those all-too-few foods that is both good and "good for you".



American Institute of Baking

DEPARTMENT OF NUTRITION

NINE ROCKEFELLER PLAZA · NEW YORK · N. Y.

Special Purpose Canned Foods

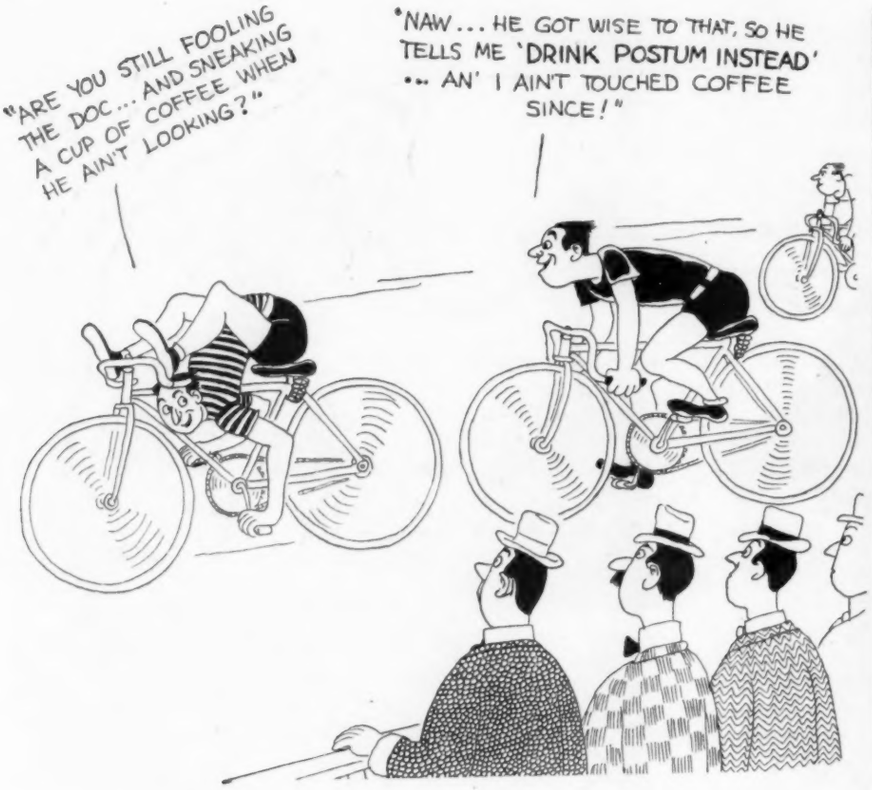
When we want to decrease our weight, reducing in most cases can be accomplished safely only when the intake of calories is restricted without limitation of other dietary essentials. It is recommended, indeed, that the daily intake of vitamins, minerals and protein be much higher in proportion than that provided by the ordinary diet of every-day consumption.

A variety of diets may be planned which will enable a person to burn accumulated body fat and at the same time be protected from the dangers of protein, vitamin or mineral deficiency. The natural foods of which such a diet ought to be principally composed are skimmed milk, leafy vegetables prepared without fat of any kind, unsweetened fruits and lean meats. Canned fruits and vegetables, juice or water packed, without added sugar or salt are particularly useful to enrich the reducing diet in vitamins and minerals.

In the usual processing of fruits, sugar may be added in amounts that vary from 20 to 50 per cent of the contents of the container. Therefore, fruits and vegetables, juice or water packed, without added sugar or salt are of value in reducing diets. Those labeled "water packed" contain water as the only added ingredient. Those labeled "juice packed" (fruits, tomatoes) are packed in juice expressed from the fruit. The extra juice increases palatability and adds to the nutritive value.

The label of accepted products of this kind provides information about the vitamin and mineral content as well as the number of calories per gram or ounce and the number of grams each of the total carbohydrate, available carbohydrate, protein and fat per hundred grams of fruit or vegetable and liquid.

The U. S. Department of Agriculture under the authority of the amended Federal Food and Drugs Act has established standards for all canned foods. Canned fruits and vegetables which meet the standards of quality and condition in every respect, except that they are packed in water, must bear a special statement showing that fact, such as "water pack pears." This statement must appear below the name of the product in a rectangular box with a solid border not less than 6 points in width. The special statement must be printed on a strongly contrasting uniform background, in capitals of a size not less than 12 point boldface for containers under 1 pound net weight and not less than 14 point boldface for containers of 1 pound net weight or over.


"ARE YOU STILL FOOLING THE DOC... AND SNEAKING A CUP OF COFFEE WHEN HE AIN'T LOOKING?"
"NAW... HE GOT WISE TO THAT, SO HE TELLS ME 'DRINK POSTUM INSTEAD' ... AN' I AIN'T TOUCHED COFFEE SINCE!"

SUPPOSE YOUR DOCTOR
told you to stop drinking coffee!

You might think he was being unnecessarily hard on you—

You might wonder how you could possibly enjoy your meals without a hot drink—

And the more you'd think about it, the madder you'd get—the more impossible it would seem to follow his ruling.

But many doctors, when they give "No coffee" advice, usually add, "Drink Postum, instead!"

When your doctor said this, you could stop fretting. For Postum is a warm, full-bodied, satisfying drink—a favorite in over 3,000,000 American homes.

Postum is, in fact, the perfect mealtime drink, perfect because it has no caffein or harmful stimulants which are often so upsetting to many people. It is simply whole wheat and bran, roasted and slightly sweetened.

Easy to make—Economical, too!

Postum comes in two forms: Postum Cereal, the kind you boil or percolate, and Instant Postum, made *instantly* in the cup. It is delicious and easy to make, either way—and costs about ½¢ a cup.

Postum is a product of General Foods.

ASK YOUR DOCTOR ABOUT POSTUM

The following brands of canned fruits and vegetables, water or juice packed without added sugar or salt, stand accepted by the American Medical Association's Council on Foods as of Sept. 1, 1939, and are distributed by the manufacturers, who are privileged to use the acceptance seal:

CELLU Apple Juice; Apple Sauce, water packed; Apple Rings, juice packed; Juice-Pak Apricots; Apricot Juice; Apricots, water packed; Green Cut Asparagus, water packed; Tips of Asparagus, water packed; Green Stringless Beans, water packed; Yellow String Beans, water packed; Tiny Beets, water packed; Blackberries, water packed; Blackberry Juice; Juice-Pak Blueberries; Carrots, water packed; Carrot Juice; Cauliflower, water packed; Juice-Pak Red Pitted Cherries; Red Pitted Cherries, water packed; Red Cherry Juice; Juice-Pak Royal Anne Cherries; Royal Anne Cherries, water packed; Little Kernel Corn, water packed; Fruit Cocktail; 10% Fruit Salad Combination, water packed; Thompson Seedless Grapes, water packed; Grapefruit, juice packed; Grapefruit, water packed; Grapefruit Juice; Kadota Figs, water packed; Loganberries, water packed; Loganberry Juice; Mushrooms, water packed; Orange Juice; Juice-Pak Yellow Cling Peaches; Peach Juice; Juice-Pak Bartlett Pears; Bartlett Pears, water packed; Pear Juice; Peas, water packed; Juice-Pak Pineapple Sliced; Juice-Pak Pineapple Crushed; Juice-Pak Pineapple Sliced, water packed; Pineapple Juice; Prune Plums, water packed; Prune Plum Juice; Black Raspberries, water packed; Juice-Pak Red Raspberries; Red Cherry Juice; Red Raspberries, water packed; Red Raspberry Juice; Rhubarb, water packed; Spinach, water packed; Juice-Pak Strawberries; Strawberries, water packed; Tomatoes, water packed; Tomato Juice, and Vegetable Combination, water packed.

DOLE Hawaiian Pineapple Sliced, juice packed; Hawaiian Pineapple Sliced, water packed, and Hawaiian Pineapple Tidbits, water packed.

NUTRADIET Applesauce; Apricots Peeled, water packed; Apricots Unpeeled, water packed; Green Asparagus, water packed; Blackberries, juice packed; Small Whole Stringless Beans, water packed; Fresh Green Lima Beans, water packed; Whole Red Beets, water packed; Royal Anne Cherries, water packed; Delphia Figs, water packed; Grapefruit, juice packed; Grapefruit Juice; Yellow Cling Peaches Halved, water packed; Yellow Cling Peaches Sliced, water packed; Bartlett Pears Halved, water packed; Bartlett Pears Quartered, water packed; Pineapple Juice; Prunes, water packed; Spinach, water packed, and Tomato Juice.

SANITARIUM Grapefruit Juice; Pineapple Sliced, water packed; Pineapple Tidbits, water packed; Pineapple Sliced, juice packed; Pineapple Tidbits, juice packed, and Pineapple Juice.

SEXTON Apple Sauce, juice packed; Apricots, juice packed; Fresh Green Asparagus, water packed; Golden Wax Beans, water packed; Green Refuge Beans, water packed; Lima Beans, water packed; Whole Beets, water packed; Blackberries, juice packed; Blueberries, juice packed; Black Cherries, juice packed; Red Pitted Cherries, juice packed; Royal Anne Cherries, juice packed; Fruit For Salad, water packed; Grapefruit, water packed; Loganberries, juice packed; Yellow Cling Peaches, juice packed; Bartlett Pears, juice packed; Sweet Wrinkled Peas; water packed; Hawaiian Pineapple Crushed, juice packed; Hawaiian Pineapple Sliced, juice packed; Prune Plums, juice packed; Black Raspberries, water packed; Red Raspberries, juice packed; Strawberries, juice packed; Spinach, water packed, and Tomatoes, juice packed.

WHEN CANCER IS NOT GUILTY (Continued from page 895)

preventable. Here are some of the points to look for:

Chronic indigestion is often due to gastric ulcer or gallbladder disease. The diagnosis of these conditions entails a thorough x-ray examination, and a remedy should be sought immediately. Many cancers of the gallbladder and stomach arise from these diseases.

Not all abnormal lumps in the breast or elsewhere on the body are cancerous, but they deserve prompt and careful investigation and in every case the benefit of biopsy [microscopic examination of a small piece of tissue]. The regular use of biopsy in determining the nature of suspicious growths has increased the cure rate by a full 7 per cent.

The appearance of abnormal bleeding from any of the body cavities is a real danger sign, although it does not necessarily mean cancer. It should be thoroughly investigated at once.

Cancer of the skin of the face is rapidly diminishing among women in countries where much attention is paid to personal cleanliness and beauty; in countries where cosmetics are forbidden, the cancer rate remains as always.

Cancer of the tongue and cheek is due in many cases to chronic irritation caused by defective or irregular teeth. This is avoidable by proper dental and oral hygiene. Any persistent sores in the mouth or white patches on the tongue should have prompt medical attention.

The careful observance of these suggestions will result in the prevention of many cancers and the early discovery of many others while there is still a high rate of curability. And whether or not you have any of these symptoms, it is always advisable to submit to regular physical examinations. Doctors are anxious to cooperate in any plan which will make early discovery of cancer possible.

In the last analysis, the problem of reducing our appalling cancer death rate rests squarely on the individual. Those who aline themselves with the forces of fear, ignorance and quackery will continue to hamper the efforts of doctors and specialists. But the growing army of people equipped with knowledge and courage are our best insurance that we can and will wage a successful battle to reduce cancer fatalities.

CANCER—Its Symptoms and Diagnosis (Continued from page 898)

ning of the growth to the time when it produces some external sign or symptom which an informed patient might be expected to heed. In some instances the patient's fate may be sealed in even this stage, though this is not true in the majority of cases. It is the second phase with which we are most concerned: that period which extends from the first appearance of warning signals to the time the patient seeks medical advice. This phase belongs entirely to the patient, for the doctor can do nothing until the patient presents himself for examination. This stage may be very short, perhaps only a few hours in the case of the patient who is intelligent and informed and who knows the fatal consequences of delay. On the other hand it may be very long, even several years, in the case of one who knows nothing of possibilities or who deludes himself into the belief that there can be nothing seriously wrong because he feels pretty well and has no pain; or who thinks that he may have cancer but is afraid to go to the doctor for fear of hearing unpleasant news. This, therefore, is the stage which we strive to shorten, because it is in this phase that the patient's fate is decided.

The third phase, on the other hand, is the responsibility of the doctor, embracing the period elapsing between the patient's first appearance to the time at which the proper treatment is applied. Here again we deal with the human equation. Steady improvement in methods of diagnosis are making dangerous delays in this stage less and less frequent.

There are only two plans of treatment of any value: surgery and radiotherapy (the x-rays and radium rays). Yet scarcely a month passes by without the announce-

(Continued on page 929)

Unsweetened Fruits

For Sugar-Restricted Diets

Whenever unsweetened fruits are desired, Cellu Juice-Pak Fruits supply a flavorsome answer. Packed in natural juice without added sweetening, they have pleasing fullness of flavor. In 14 varieties for widest diet choice.

WATER-PAK FRUITS

Cellu Water-Pak Fruits are packed for lower carbohydrate diets, and offer many varieties.

Do You Have the LATEST CELLU CATALOG?

Forty pages of fascinating, helpful information on restricted diets — new recipes, many diet helps, and *a new table of food values of common foods.* Write for *Free Copy* today.

All Cellu Fruits are accepted for use in Sugar-Restricted Diets

ACCEPTED AMERICAN MEDICAL ASSN.

CELLU LOW CARBOHYDRATE *Dietary Foods*

CHICAGO DIETETIC SUPPLY HOUSE, INC.

Do You Need Health Material?

Send for free catalog—

"Health Publications of the American Medical Association"

American Medical Association, 535 N. Dearborn St. Chicago

MY FINEST **CALIFORNIA FRUITS** SENT ON APPROVAL EXPRESS PREPAID

Packed in 2 Redwood Boxes DELICIOUS SUN-RIPE FRUITS

10 lbs.

2½ lbs. LARGE WHITE FIGS
2½ lbs. CALIFORNIA DATES
2½ lbs. MAMMOTH PRUNES
2½ lbs. WHITE RAISINS

Canoga Farms, R.F.D. 1, Encino, Calif.

Gentlemen, kindly send me your special TEN POUND assortment of SUN-RIPE fruits all charges prepaid. If after sampling the fruits I am not entirely satisfied I will return the rest to you at your expense, or I will send you the $3.00 by return mail.

Name_____

Address_____

City_____ State_____

Bank or other reference_____

If you wish to send check with order I will include a sample of my delicious DATE-NUTS.

America's best-known baby... *cooks vegetables specially for your baby...*

It is not enough to *grow* vegetables *specially* for your baby. Gerber's also *cooks* these vegetables *specially* for your baby. Their precious vitamins and minerals are safeguarded by Gerber processes. Scientific equipment—too costly for home use—prepares baby's meals better than can be done in your own kitchen even with your painstaking care. Despite these advantages, Gerber's Baby Foods cost no more.

Further still, Shaker-Cooking—an exclusive Gerber process—cooks food evenly inside sealed cans to preserve *natural* color and flavor.

For baby's sake, buy the baby foods bearing the picture of America's Best-Known Baby.

Gerber's
Baby Foods

APRICOT AND APPLE SAUCE
APPLE SAUCE ... BEETS ... CARROTS
CEREAL ... GREEN BEANS ... LIVER
SOUP WITH VEGETABLES ... MEATLESS SOUP ... PEAS ... PRUNES
SPINACH
VEGETABLE SOUP

NEW—GERBER'S CEREAL FOOD
Nourishing, digestible, tasty. Ready-to-serve to your baby. For *free* sample write Gerber's, Dept. 1210, Fremont, Mich.

RIDING SHANKS' MARE (Continued from page 904)

found that, without exception, they are people who depend too much on eight-cylinder and knee-action transportation.

This is bad, especially for those who hold down swivel-chair jobs, and the sooner such sedentary workers snap out of their rust-gathering lethargy the better. If your doctor advises you to ride shanks' mare, please use your head when you approach the steed. Most persons, many of whom should know better, fail to derive any benefit from their newly acquired pedestrian activities, because they don't walk far enough. They have a tendency to *overdo* by walking too fast; they *underdo* by making their jaunts too short.

Whenever any one comes to me for advice on hiking, I always try to emphasize the vital importance of one's being in the proper frame of mind, for hiking grimly and doggedly is an utter waste of time and effort. Unfortunately, we cannot turn off one set of thoughts and switch on another, in the manner of toying with dials on the radio. But we can, and should, absorb the spirit of play. Without it, exercise of any kind, whether indoor or outdoor, degenerates into machine-like monotony.

Do you enjoy being by yourself? Fine and dandy! An elusive white ball is the nucleus of golf. The "feel" of a trigger sets up certain vibratory sensations in the body of a big-game hunter. The pull on a line and the *zing* of a reel form the powerful magnet that annually draws the dyed-in-the-wool angler to glass surfaced lakes and swift moving trout streams. Many a hiker carries a camera. A few, determined to capture on canvas the wild beauty they see, take along brushes, tubes of oil colors and a palet. Others are satisfied with nothing more than notebook and pencil. Many go with only a knapsack on their back, tingling with the thrill of being in the midst of nature's bigness. No matter in what class you find yourself, try to maintain at all times an equilibrium between mind and body.

Do you prefer companionship? Then join a hiking club, or if you have talent for leadership, start one of your own! After all, the primary idea is to get the key, unlock the door to the stable and ride shanks' mare to the far hills and the golden sunsets. The open skies, the clean air, the winding footpaths—these are the ingredients in nature's medicine. And they're free!

DANGEROUS WATER! (Continued from page 901)

Throughout a wide area of the Great Plains prolonged drouth has lowered ground water levels to such an extent as to cause widespread failure of shallow wells throughout the region. Rivers and streams are often undependable, and evaporation greatly exceeds the rainfall. In the effort to obtain adequate water supplies, wells have been driven deep into underlying formations. Unfortunately, the water obtained is usually highly mineralized with sodium sulfate, sodium chloride and sodium bicarbonate. Many of the waters are extremely hard, and the iron content is frequently objectionable. In addition, these deeper waters usually carry sufficient fluoride to cause mottled enamel.

In many localities better supplies undoubtedly could be found by scientific water prospecting; but there is urgent need for practical methods of fluoride removal from private supplies. It is true that a number of methods have been proposed, such as filtration through specially prepared calcium phosphate and more recently through specially treated ground bones; but further work will be necessary to demonstrate the practicability of these methods. Meantime, until such methods become available, parents of young children in the affected areas should make every effort to provide safe drinking water. If the rainfall is insufficient, water should be hauled or shipped from the nearest available supply. In some instances even distilation might be advisable. Under existing conditions, unless better water supplies can be provided, mottled enamel threatens to become much more prevalent throughout a wide territory.

HEALTHGRAMS

FROM ARTICLES IN THIS ISSUE

¶Marriage is not a form of psychotherapy: It is an adult partnership which makes heavy demands on both partners and which calls for the best possible mental hygiene. *See page 872*

¶The medical profession as a whole is the great repository that holds, and from which the individual doctor of medicine draws, all the art and skill learned by the race to alleviate pain and cure disease since the days of Hippocrates. *See page 875*

¶The idea of injecting blood directly into the individual who is blood starved has been capturing the fancies of people for thousands of years. *See page 881*

¶Because a child so often reflects his parents' attitudes, it is especially important that adults learn to discipline their emotions. *See page 890*

¶The growing army of people equipped with knowledge and courage are our best insurance that we can and will wage a successful battle to reduce cancer fatalities. *See page 893*

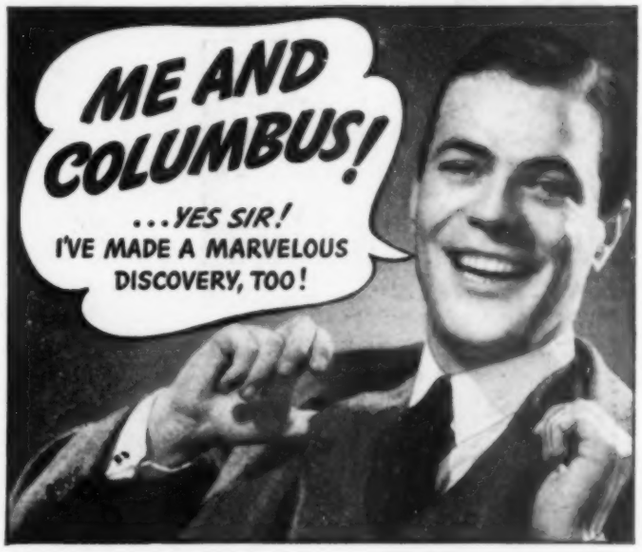
¶When any part of man's organism is out of order, whether mind or body, both mind and body are likely to be disturbed. *See page 914*

¶Mottled enamel, a condition involving the teeth, is generally endemic, like goiter. *See page 899*

¶One has to learn to walk before one attempts to hike, for a conservative estimate reveals that scarcely one person in twenty knows how to walk well. *See page 902*

¶Nothing is more wonderful than the way the bones enlarge as the body increases in age and size. *See page 905*

¶Cancer is frequently a definitely curable disease, in spite of the mistaken belief of many that it is always fatal. *See page 896*



SAM: All right, Chris, let's have the low-down! I've been wondering what made you so chipper lately!

CHRIS: The finest-tasting breakfast cereal you ever put in your mouth, Sam—Post's 40% Bran Flakes! They're selling at a new low price now—and I learned a few months ago Post's Bran Flakes are not only mighty fine eatin'—they also give you *two extra benefits* . . .

FIRST, Post's Bran Flakes provide just enough bran, a *natural* regulator, that helps protect you against sluggishness. People whose systems are irregular, due to lack of bulk in the diet, find Post's Bran Flakes, eaten daily, a wonderful help.

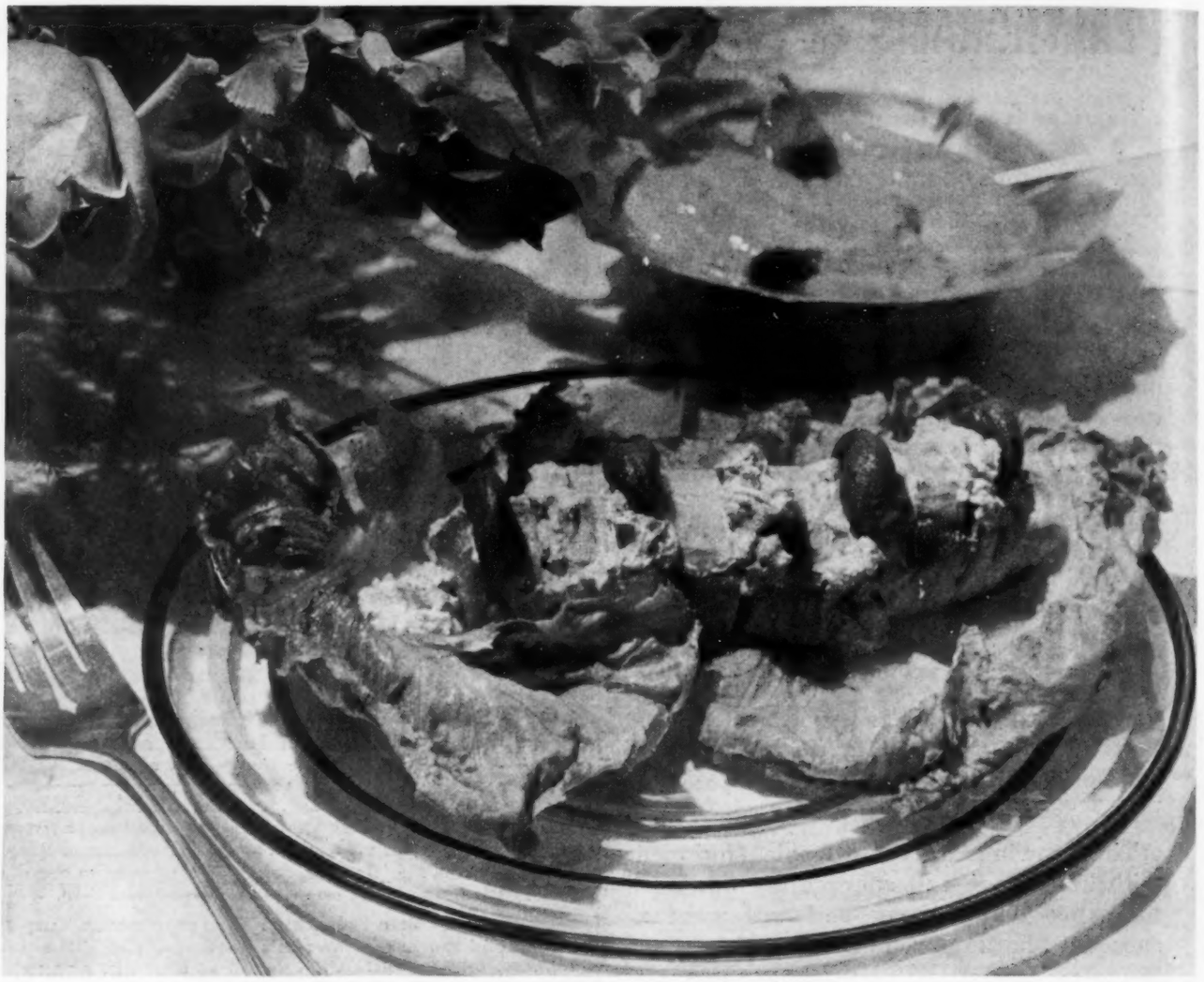
SECOND, Post's Bran Flakes are rich in phosphorus. They are a rich food source of iron, and a good source of Vitamin B_1—an essential for maintaining good appetite . . . And today, Post's Bran Flakes come to you at a NEW LOW PRICE!

SIX MONTHS LATER . . .

SAM: You sure were right, old man—I've been eating those swell-tasting Post's Bran Flakes every morning for six months, and believe me, I never felt better in my life!

CHRIS: You said it, Sam! It's a great thing to find a cereal that tastes so *good* and gives you important *extra benefits* as well!

IMPORTANT: Post's Bran Flakes, due to their bulk, are a *regulative* cereal. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes, eaten regularly—as a cereal or in muffins. For cases not corrected in this simple manner, a physician should be consulted. Post's Bran Flakes are a Post Cereal—made by General Foods.



BANANAS

By HARRIET MORGAN FYLER

Bananas are so popular and readily available each day of the year that they have won a firm place in the American dietary. The fruit is fully ripe when a dapple of brown appears on its golden yellow skin. The brown flecked stage denotes complete ripeness and assures that sweet, mellow flavor so characteristic of the banana.

The origin of the banana is legendary, but its first home is presumed to be southern Asia. The banana plant was introduced into the New World in 1516 by a Spanish missionary. He brought it from the Canary Islands to Santo Domingo, whence it quickly spread to the tropical mainland.

The banana plant grows well in all moist tropical countries. The plant grows from 15 to 30 feet high and bears fruit in from twelve to fifteen months. Each banana plant bears but one stem of fruit. When that is harvested, the plant is of no further use, except to be cut down so that it may rot and fertilize the soil for new plants that are growing from the same root-stock.

Fruit is harvested from the same banana plantation every day of the year. Bananas are always cut green and allowed to ripen off the plant. A plant-ripened banana is unpleasantly mealy in character and has little flavor. The stem of bananas is cut from the plant by means of a long knife. Every possible precaution is taken not to bruise and damage the fruit. Specially constructed ships equipped to insure proper handling bring this tropical fruit to the United States from Honduras, Guatemala, Costa Rica, Panama and Nicaragua in Central America; Colombia and Ecuador in South America; Cuba in the West Indies, and Mexico. Refrigerated trains transport the fruit to interior markets.

When purchasing bananas in the market, it is preferable to buy them by the hand or cluster and not as single bananas, which are apt to be torn from the stock. Then the peel will not be broken, and there will be no exposed ends of pulp. Because bananas, like certain other fruits, ripen so quickly, they are purchased and carried by the retailer in a partly ripe condition. It is therefore important that they be purchased by the consumer two and three days in advance of eating

STUFFED BANANAS

Select small-sized bananas, one for each serving. Peel, and cut in thick slices. Arrange on lettuce leaf. Then mix a cream cheese with sufficient cream to make it a smooth, thick consistency, and stuff it between slices. Garnish with cashew nuts, and serve with mayonnaise.

ACROSS, AT LEFT

CREAMY FRUIT SALAD

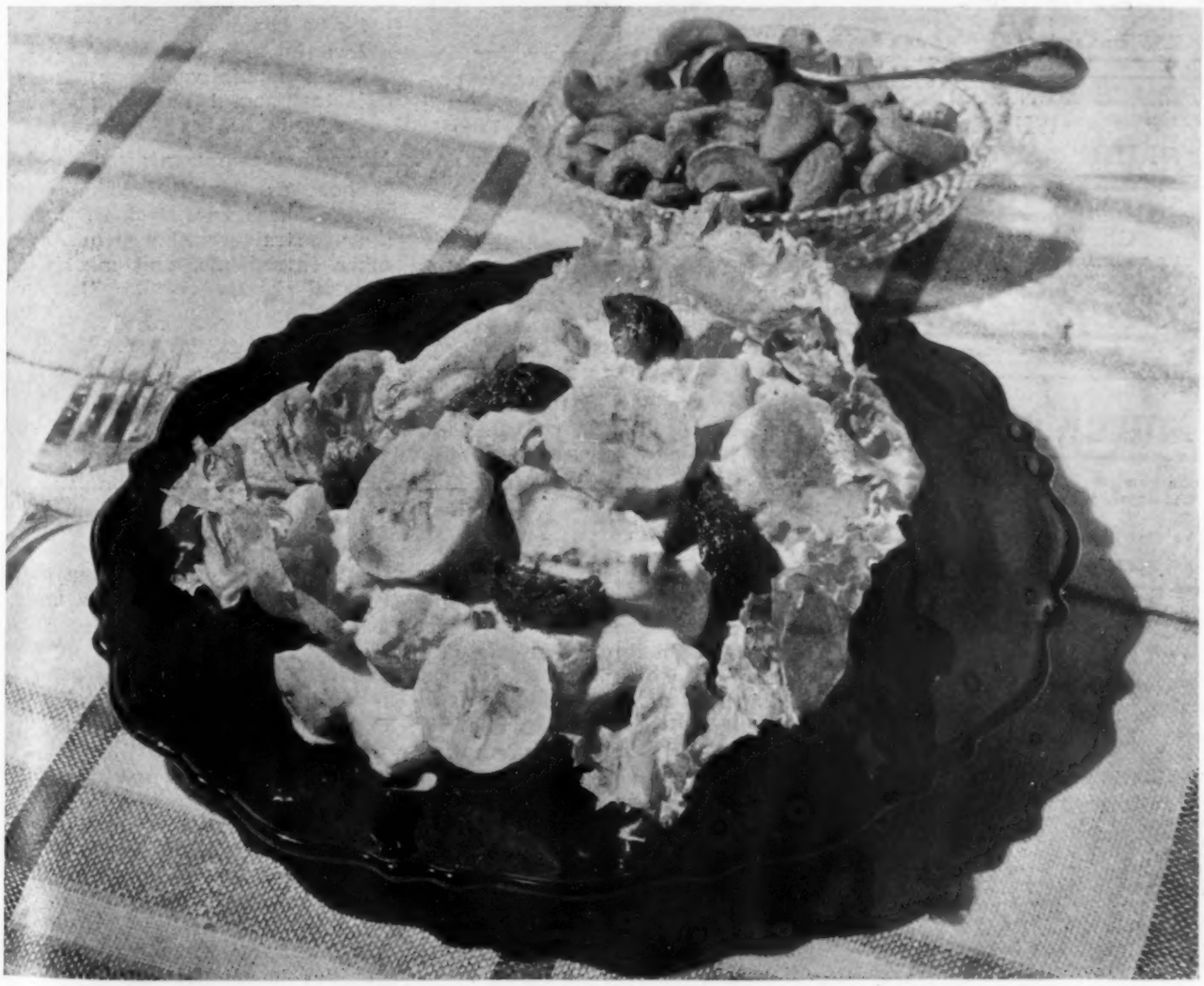
Slice bananas, apples and celery into mixing bowl. Moisten with mayonnaise that has been thinned with milk, and mix all together. Serve on lettuce leaf, and garnish with slices of ripe strawberries and bananas.

BELOW

and allowed to become completely ripe at room temperature (not in a refrigerator, as cold prevents proper ripening). In this way, there is no difficulty in having ripe bananas available in the home whenever desired.

Bananas are a good source of vitamins A, B_1, C and G (riboflavin) and contain small amounts of important minerals, including calcium, copper, iron and phosphorus. A banana is about one-fifth carbohydrate; when the fruit is fully ripe, this is practically all sugar. For this reason it has a greater caloric value than any fresh fruit, except the avocado. A medium sized banana yields about 100 calories, equivalent in food energy to 20 grapes, 4 dates, 2 figs, 2 small apples or a cupful of orange juice. The banana is an easily digestible fruit, and when ripe it is often included in the infant's diet. The ripe banana can be quickly whipped into a liquid form by beating with rotary egg-beater or electric mixer until creamy, or pressed through medium-mesh wire strainer with a spoon. Mixed in this liquid form with milk, it is a refreshing and nutritious drink for children and adults who are trying to gain weight.

Dietitians and housewives who are responsible for planning appetizing meals for their families are grateful to the banana for its versatility. It may be used in salads, fruit cups, puddings, pies, breads and sandwiches. Nut bread sandwiches with a filling of sliced bananas and brown sugar are delicious. The banana may be served even in place of a vegetable, although its big cousin—the plantain—is a better vegetable substitute. Unlike the banana, the plantain is never eaten raw. The



For EVERY MILK PURPOSE

● Particularly for infant feeding, Van Camp's Evaporated Milk is widely recommended by physicians because it is uniform in composition and readily digestible. Used in cooking, it adds a rich, creamy flavor to many dishes. Contains double the amounts of fat, protein, minerals and milk sugar in cow's milk. Sterilized and homogenized.

ACCEPTED AMERICAN MEDICAL ASSN Council on Foods

VAN CAMP MILK CO.
INDIANAPOLIS, IND.

THIS tree ripened ORANGE JUICE TASTES DIFFERENT

● The whole family will like the delicious tree ripened flavor and uniform quality of Dr. Phillips Orange and Grapefruit Juice and Grapefruit hearts. Scientifically canned fresh from the grove with vitamins A, B and C preserved to a high degree.

Dr. Phillips
CITRUS FRUIT JUICES
Dr. P. Phillips Canning Co. Orlando, Florida

PLEASE MENTION HYGEIA WHEN WRITING ADVERTISERS

DO YOU LIKE GOOD CREAM CHEESE?
HAVE YOUR DEALER SHOW YOU THE NAME
Breakstone's
WHEN HE CUTS YOUR ORDER

Church's Pure Natural Grape Juice ●

made from properly ripened grapes. Contains no added sugar, water or other substance whatsoever.
Free from the excess acid of unripened fruit.
Church Grape Juice Company, Kennewick, Wash.

PURE
NON-SEPARATING
UNDILUTED
DELICIOUS

THE SUN-RAYED CO., FRANKFORT, IND.

America's Favorites

method of cooking that appeals most is to cut the black-skinned fruit into slanting slices and brown these very slowly on both sides in butter. The yellow skinned plantain is sometimes baked in its skin; while the green plantain finds favor when boiled. Cooked in either of these ways, the fruit is considered a good accompaniment of meat.

To keep sliced or cut bananas from turning dark just dip the slices into or sprinkle them with fresh or canned grapefruit juice, canned pineapple juice or orange or lemon juice.

Banana Pudding

3 medium sized bananas
1 package vanilla cornstarch dessert powder
2 cupfuls milk
½ cupful whipping cream

Mix the vanilla cornstarch dessert powder with two cupfuls of milk, and cook until thick, stirring constantly. Fold in the sliced bananas, pour the mixture into sherbet glasses, cool and serve, topped with whipped cream.

This is a simple, nourishing dessert for children and is easily prepared. This recipe may be used also for banana cream pie. For pie some prefer to place a layer of sliced bananas in the baked pie crust and then pour the cream filling on top.

Banana and Peanut Salad

1 banana
Mayonnnaise
Chopped peanuts
Lettuce or watercress

Allow one banana for each person. Peel, roll in mayonnaise and then in finely chopped peanuts. Place on bed of shredded lettuce or watercress. Serve with extra mayonnaise if desired.

Banana Tapioca Cream

2¼ quarts milk
6 tablespoonfuls (2 oz.) quick-cooking tapioca
1 teaspoonful salt
6 eggs
1½ cupfuls sugar
1½ teaspoonfuls orange peel, grated
6 bananas

Scald milk in double boiler; add tapioca. Cook 15 minutes, stirring frequently. Pour slowly over beaten egg yolks to which sugar has been added, stirring vigorously. Return to double boiler, and cook until mixture thickens, stirring constantly. Remove from stove and add grated orange peel and salt. Quarter bananas lengthwise, and immediately slice into tapioca cream. Fold in stiffly beaten egg whites. Serve chilled.

Banana Milk Shake

1 ripe banana
1 cupful milk
¼ teaspoonful vanilla or
⅛ teaspoonful nutmeg may be added

Using hand equipment:

Slice or break banana into medium-mesh wire strainer. Press through strainer with a spoon. Add other ingredients, and mix in a cocktail shaker.

Using electric equipment:

Break banana into bowl of electric mixer. Beat on low speed until creamy. Add other ingredients gradually and continue to beat slowly until smooth.

FIRE TRAP! (Continued from page 912)

"It is nothing short of criminal for a community to expose its children to hazards that may be avoided. Where dangers exist that cannot be eliminated, the school authorities and inhabitants of a community have a most strict moral obligation to take every precaution that will minimize or nullify such hazards. If children are regularly instructed in fire drills and know exactly what they must do in cases of actual emergency, there will be far less danger and trouble than if no effort has been made to teach them the proper procedure to follow.

"During the course of the past twenty-five or thirty years we have learned much about fire safety, frequently at a cost of great sorrow and suffering. Simple precautions taken ahead of time would have obviated much of this distress. The school fire safety program which has been drawn up, if each point is stressed and followed out unfailingly, will do much toward eliminating fires and their resultant losses and will contribute immeasurably, not only to the general welfare of all communities but to that of thousands of children and families the country over."

CANCER—Its Symptoms and Diagnosis

(Continued from page 923)

ment of some new cure for cancer, and the victims of this disease are still exposed to the heartlessness of innumerable quack treatments. Some one has estimated that no less than 1,500 cures for this disease have been exploited from time to time, with not the slightest evidence to believe that any of them are of the smallest value.

Every intelligent layman must know how eagerly the medical profession is waiting for the discovery of a cure which will be more sure and specific than either surgery or radiotherapy, and how happy it would make the individual doctor to use such treatment for the cancer patients under his care. I for one do not believe that these two worthwhile means of treatment will be the treatment of the future, but they are the only reliable plans now available. Sometimes they are used separately, sometimes in combination. When, therefore, they are recommended in the treatment of some one dear to you, do not get panicky and seek wildly for some other more agreeable plan, and above all, pay no attention to any of the advertised quack cures which are so likely to mean dangerous delay and resulting heartache.

Whether in our own or in some future generation, nothing is much more certain than that the cause of cancer will sooner or later be revealed and thus perhaps point the way to a specific cure. On the other hand, a highly effective cure may be found long before we know the cause. We do not yet know the bacterial cause of smallpox; but in vaccination, discovered by an observant and clear-minded country doctor, we have a sure preventive. By contrast, the discovery of the cause does not necessarily carry with it the indication for specific cure. We have known the exact bacterial cause of tuberculosis for half a century, but no specific cure is yet available, though thousands are saved by the simple measures of fresh air, rest and sunshine.

The point I am trying to drive home is that instead of bemoaning the fact that we do not know more, we should strive to make full use of what we do know, which is the next best thing. Some one has recently estimated that if full use

Keep him

"IN QUARANTINE"

If your child develops sniffles, a cough, a sore throat, or suddenly becomes restless and fretful, it is wise to establish your own home quarantine—keeping him alone in his room for a day or two.

At intervals take his temperature. If he develops a fever or if other complications appear, send for your doctor. His symptoms may be a warning that he is coming down with one of the diseases of childhood.

In any case, it is safe to regard an illness of a child as contagious until known to be otherwise. To put off isolating the child until the doctor has pronounced it measles, or scarlet fever, or whooping cough may endanger other children. Most contagious diseases are more easily transmitted in their earliest stages.

If your child proves to have a contagious disease, releasing him too soon may cause a relapse. He should remain in bed until the doctor gives him permission to get up. Keep other children as far away from the sick room as possible. Dishes and silver used by the sick child should be separated from other family dishes and boiled; his napkins, towels and bed linen also kept apart and sterilized.

Two or three months after your child has recovered from a contagious illness, it is advisable to take him to the doctor to see if there are any aftereffects. For lack of this precaution many youngsters grow up with permanently weakened hearts which sometimes follow in the wake of rheumatic fever, diphtheria, scarlet fever, whooping cough or measles. Kidney trouble and impairments of hearing and eyesight are other possible complications of some of these diseases.

During any local epidemic, parents should keep children away from parties, movies and crowds generally. If your child or one of his playmates is ill, do not let them play together until you are sure that the danger is past. If you know your child has been exposed to measles, whooping cough or scarlet fever, it is particularly important to keep him where you can watch him closely.

The Metropolitan will gladly send you any, or all, of these booklets: "Measles," "Scarlet Fever," "Whooping Cough," "Diphtheria," "Tonsils and Adenoids," "What is Rheumatism?" "Colds, Influenza, Pneumonia." Address a postcard to Booklet Department 1039-Z.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board* LEROY A. LINCOLN, *President*

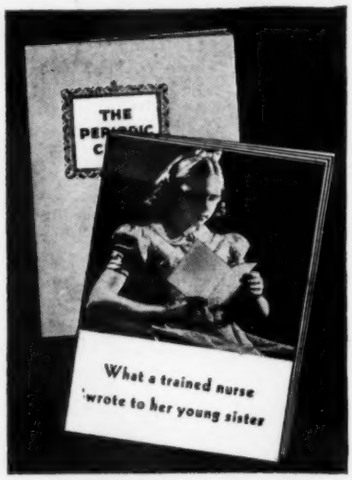
ONE MADISON AVENUE, NEW YORK, N. Y.

Copyright, 1939, by Metropolitan Life Insurance Company

Quiet and Trustworthy Help on a Serious Problem

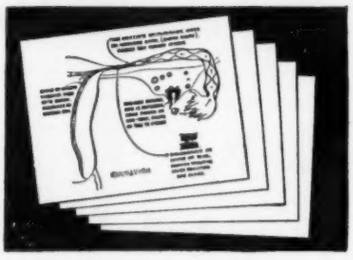
THERE IS something so touching about the confidence of your girls, when they bring you questions about the physical changes in their lives. You wish with all your heart to give them information that is scientifically truthful, yet delicate, gentle, and really helpful.

Here at last is material to solve your problem completely. The two booklets were used during the school year 1938-39 by 13,455 teachers—and many interviews attest their usefulness, for individual girls and for classroom instruction.



For High School Girls—"The Periodic Cycle" contains important information based on modern medical opinion. Helps dispel old-fashioned "bugaboos" that might stand in the way of an active, happy girlhood.

For Younger Girls—"What a Trained Nurse Wrote to Her Young Sister" is a sympathetically written booklet to be read by young girls *before* menstruation begins. Easy to understand and accurate.



NEW... Menstrual Anatomy Charts—Set of five facsimilies, in color, of charts now on exhibition at the New York World's Fair. They show the whole process of menstruation. Simple, accurate text. Size 14 by 11 inches, mailed in a heavy plain envelope which can be kept in your desk.

• Mail the coupon today for this useful and authentic material. You may have as many booklets as you need.

FREE!

Two authoritative booklets on menstrual hygiene

(Be certain to ask for a sufficient number of booklets so that each girl in your class may have her own copy.)

Complete set of five Menstrual Anatomy Charts

Mail this coupon for your free booklets and charts

Personal Products Corporation, Dept. E-5
500 Fifth Avenue, New York, N. Y.

Please send me ..... copies of "The Periodic Cycle."
..... copies of "What a Trained Nurse Wrote to Her Young Sister."

( ) Please send me also the set of 5 Menstrual Anatomy Charts.

*Name*_____

*Position*_____

*School*_____

*Address*_____

*City*_____ *State*_____

Do You Need

HEALTH MATERIAL?

The American Medical Association has a large amount of authentic health material in the form of pamphlets and books. They cover a wide range of subjects. Complete catalogue listing this material with prices will be sent on request.

were made of existing medical knowledge, the average life expectancy would be increased at least ten years. The cancer campaign is therefore a call to marshal all available forces in the fight against this enemy of the race. In the laboratory the search for the cause will go on, as will efforts to develop our methods of diagnosis and treatment. The clinical studies will continue with the same goal in mind. The government has entered the fray with the formation of the National Cancer Institute, manned by leading investigators and well financed by the federal government. Local and state health departments have awakened to the need of intensive effort against this disease. For example, in Connecticut, the State Tumor Committee appointed by the state medical society has performed an outstanding service in the establishment of tumor clinics and in a well planned educational campaign among the people.

The position of the medical profession in this campaign should be made plain. It is under no delusions that in the present state of available knowledge any amount of popular education will save every cancer patient, but it is convinced that such educational efforts will save thousands of lives every year. In some types of cancer, cure is easy; in others the percentage of cures is still lamentably low.

The inevitable conclusion of every one who has ever studied the cancer question has been that the one factor which, far more than any other, determines the fate of the patient is the stage at which he receives proper treatment. The patient who comes early is apt to have a fine chance; the one who comes late has very little. The doctrine must be spread to the people, for it is they who are most directly concerned and who have a right to know just what they can do, individually and collectively, to increase the proportion of early favorable cases and to decrease the present appalling numbers of advanced and hopeless cases. Instead, therefore, of lamenting the fact that we do not know more about cancer, let us all make full use of what we do know now. If we really squeeze our present knowledge dry, we shall be doing the one thing which, more than any other at the present time, may be expected to mitigate the ravages of cancer.

Wonder Stories of the Human Machine

(Continued from page 908)

these points. Hence it is a serious thing to have young bones damaged at the ends, as it may stop the growth and cause all the cartilage cells to turn to bone at once. This is sometimes seen as an abnormal condition in the people who are short-legged or armed. Not the dwarfs, who are usually well proportioned but small, like our tiny automobiles, but those who have normal adult bodies, lacking only normal length in legs and arms. In such cases the bones of the face are also deformed at times.

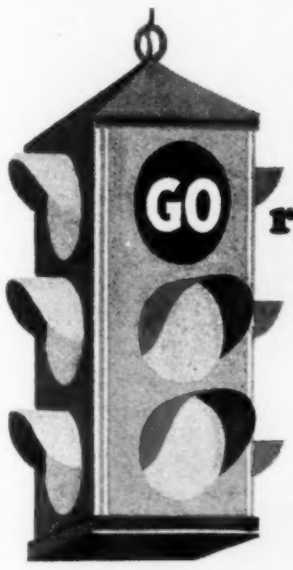
When growth is complete, which appears to be determined by a chemical secretion which has a brake-like action on growth, final bone deposit takes place in the cartilages at the ends of the bones, and the adult stage is reached. This secretion is called a hormone, and its appearance seems to depend on a hereditary factor. Sometimes the brake fails to work, and the result is the production of a giant. For the same hereditary reasons some of us are tall and some short: The bones may be heavy and massive, sort of truck construction, or slender and delicate like a racing car. We say that some particularly powerful man is "large boned," and this is often literally true. His skeleton is heavier and more massive than the average.

Another marvelous thing about the bones is that they should be so nearly alike on the two sides of the body. Generally there are minor differences, especially in length; but these are usually imperceptible, and only careful measurements will reveal them.

Automobiles are able to endure an untold number of shocks through a system of springs. Without this elastic shock absorbing material, cars would go to pieces almost immediately. We have all watched young animals and children at play, doing bone-breaking stunts repeatedly with no more serious results than an occasional bruise. At this age bones are very springlike in their elasticity. Sometimes a severe strain will injure a child's bone to some extent, but an adult would have a serious fracture after a similar strain. Such injuries often do not result in a complete break, but the bone bends so far that one side gives way, like a piece of elastic wood overstretched. Such a fracture is called "green stick" and happens only while the bones are so young that comparatively little lime has been deposited in them. The lime salt deposits taking place in the cartilaginous forms gradually decrease the elasticity and increase the strength of the bones, continuing until late adult life. When this process nears its completion we cannot fall about with safety as can a child, as the bones are then more brittle and break rather than bend. Similar changes take place in the structure of metals, and we hesitate to drive an old car on a long, hard trip, as the metal is said to be "crystallized" or "fatigued" and is more likely to break.

There is a considerable amount of elastic material in the bones until late in life. The lime in the bones is not a fixed quantity but varies

(Continued on page 951)



Many physicians and dentists tell their patients to

right ahead and enjoy chewing gum

It's a Beneficial Pastime

With such a recommendation, you too can go right ahead and enjoy chewing gum. It's a wholesome, healthful pleasure that adds much enjoyment to work, play and everyday activities. And at the same time chewing helps do a good job of stimulating circulation in your gums and of cleansing the teeth. Also, Chewing Gum is good for children's teeth and mouth health. *There's a reason, a time and place for the daily chewing of gum.*

Four Factors toward Good Teeth: Proper Food, Personal Care, Your Physician and Dentist and Plenty of Helpful Chewing Exercise.

THE NATIONAL ASSOCIATION OF CHEWING GUM MANUFACTURERS, ROSEBANK, STATEN ISLAND, NEW YORK

QUESTIONS AND *Answers*

Feeding Bacon to Babies

To the Editor:—It appears to be a fairly common practice of doctors and pediatricians to add bacon to the diets of babies and small children. Why do they do it? Is it something for the babies to chew on for the development of gums and teeth? Is it given for certain nutritional factors besides the obvious contribution of food energy? J. H., Illinois.

Answer.—The following paragraph is taken from a recognized textbook on diseases of children published as long ago as 1926:

"I do not approve of giving bacon to babies. It is generally admitted that fried fat is very indigestible not only for babies, but also for children and adults. I fail to see why fried pig's fat, of which bacon is largely composed, should be any more digestible than any other form of fried fat. No one thinks of giving roast pork or fried or boiled ham to babies and young children and yet these forms of pig meat should be more easily digested, because of the way they are cooked, than is bacon. There is, furthermore, no reason to believe that the meat of the pig is any better suited for babies and young children than that of sheep or kine. I, therefore, do not give bacon to babies and young children."

We submitted the question to three recognized pediatrists, and they say:

(1) "There is no adequate explanation for the common practice of adding bacon to the diets of babies. I do not know the origin of this practice or any good reason for its survival. Since bacon is a high fat food, it must be broiled crisp before it is given to an infant. In this process, most of the fat is removed. There are a great many pediatrists today who do not add bacon to the infant diet. Infants can chew better on toasted bread crusts or zwieback, and this material is much easier to digest. Bacon contains no nutritional factor besides the fat and protein."

(2) "The use of bacon in the diets of babies and small children was for many years a fairly common practice among doctors, but I think it has pretty well died out. It is a little difficult to tell why it had so long a popularity. I do not think it was ever used for the purpose of developing gums or teeth. I believe there was some sort of a vague idea that the fat which it contained carried with it some valuable nutritional element. That was in the 'previtamin' period. Since we now know that the vitamin content of bacon is practically negligible there is no obvious reason why bacon should be given. I think there is even a certain objection to giving it to babies. In the crisp form, there is a certain danger of inhaling part of it into the respiratory tract, and certainly it is objectionable to give any form of pork that is not thoroughly cooked. The old-fashioned bacon rind that some babies got in certain strata of society is fortunately no longer encountered, and I believe never had any real standing with physicians."

(3) "I am not at all in sympathy with the general habit of giving bacon to young children. I do not see any reason for it at all."

Body Temperature

To the Editor:—What is the physical process which results in a fever or rise in the body temperature? G. S., Connecticut.

Answer.—The temperature of the body is a balance between the heat which appears and the heat which is lost. The heat may be produced by muscular action as in exercise, shivering, muscle tonus, increased metabolism from chemical agents or by absorption from outside sources. Heat is lost by the air we warm in

Black Box, N. Y.

What causes the moons on finger nails?

respiration, by radiation, conduction and convection and by evaporation of sweat. In heat stroke the body temperature rises because heat is absorbed faster than it can be eliminated. The liver may at times be stimulated to excessive heat production with a rise in body temperature.

Fever usually refers to disturbances in heat regulation, which are caused by the proteins and toxins of invading organisms. The initial change is a decrease in heat elimination. The blood vessels are constricted; the skin is cold, and this results in reflex shivering and greater heat production as well as reduced elimination. Body temperature rises until heat production and heat loss again strike a balance at a higher level. The body remains in a fever until the regulating mechanisms are again adjusted at the proper temperature level.

Feet

To the Editor:—Why do one's "corns" hurt during damp or rainy weather?

G. S., Connecticut.

Answer.—It is generally agreed that scars, "corns," ulcers and rheumatic joints often do become more painful before an approaching storm. In a series of 367 arthritic patients, 80 per cent were found to respond in this way. The lower atmospheric pressure is believed to be the factor most responsible, though changes in temperature, humidity and electrical charges may be concerned. The exact physiologic changes causing the increased pain are not well understood. The best idea is that with weather changes the body undergoes variations in size of blood vessels, blood pressure, reaction of the blood and amount of oxygen used. Some of these conditions might easily lead to increased inflammation and pain sensitivity in injured or diseased tissues.

Operation on Ears

To the Editor:—Has the operation for deafness called "the window" ever been perfected? What have been the results?

A. M., California.

Answer.—Unfortunately the early release of publicity regarding the operation known as "fistulization of the labyrinth" to restore the hearing has aroused false hopes in many persons suffering from a progressive hearing handicap.

While several ear surgeons in different parts of the world have reported a number of cases of so-called otosclerosis in which the hearing has been improved after this operation, at present the operation has not been perfected.

The surgical procedure is difficult. It should be performed by one who is skilled in the technic and only on relatively young persons who have a considerable amount of residual hearing by bone conduction and who have large ear canals, making the drum head readily accessible. Thus the operation has a limited field of application.

The person who is willing to submit to the operation should be made to realize that the procedure is not free from danger of causing the complete loss of whatever remnant of hearing he possesses in the ear and that a fatal meningitis may result.

The average ear surgeon today is conservative about advising patients to seek this form of relief, especially since many individuals can be helped to maintain their contacts with the modern hearing aids now available.

Skin Disease

To the Editor:—How far has modern medicine advanced in combating neurodermatitis symptoms: dry, itching skin with pinkish pimples?

P. A., New York.

Answer.—Taking it for granted that the diagnosis of neurodermatitis is correct, one must state that naturally numerous different factors come into play in the various manifestations of this disorder and that therefore without seeing such a patient and making a careful history and examination, one cannot prescribe for him.

As there are numerous forms of neurodermatitis, it is presumed that this refers to the variety called atopic eczema. There is no "specific" remedy for this disease. Sensitization factors are of limited importance. If the individual can be found to be definitely sensitive to various internal and external agents, these should be removed to as great an extent as possible.

Such an individual should get plenty of rest and freedom from mental strain and worry.

The patient may be benefited by the taking of special vitamin preparations and certain drugs, depending on the condition. Sedatives for assuring proper rest may be necessary. X-ray and light treatments may be of help in special cases, but each case must be decided on individually, depending on the conditions found at the time of examination.

"Cracking" Joints

To the Editor:—If a person cracks his knuckles will they become larger than their original size?

R. B., New York.

Answer.—The ends of bones which make up joints are fitted with pads of cartilage, and between these is a delicate membrane in the form of a flattened sac which secretes a lubricating fluid. Actual contact is thus made by this somewhat viscous agent known as the synovial fluid. When the bones of a joint are pulled, this contact may be broken with a snapping sound. "Cracking" the knuckles may loosen the joint, but there is no evidence that it stimulates growth.

Finger Nails

To the Editor:—What causes the moons on our nails?

A. B., New York.

Answer.—Under the greater part of the body of the nail, the matrix is thick and raised into a series of longitudinal ridges which have many blood vessels; the color of these is seen through the transparent tissue. Near the root of the nail the papillae, or finger-like projections, are smaller, have fewer blood vessels and have no regular arrangement. Here the nail is not firmly adherent to the connective tissue layer but is only in contact with it; hence this portion is of a whiter color and is called the lunula, or moon, on account of its shape.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

THERE is no mystery about Tampax. It is simply a kind of monthly sanitary protection *worn internally*. Each individual Tampax is sealed in a hygienic container which allows you to insert the Tampax neatly and daintily.

Tampax was perfected by a doctor and more than 181,000,000 have already been sold. It brings new comfort and freedom to club women, office workers, athletes, students, housewives. It does away with chafing, odor and "bulking," providing a smooth costume-profile even in swim suits or sheer evening gowns. You forget you are wearing Tampax!

Made of pure, long-fibered surgical cotton, highly compressed. Tampax is extremely absorbent and efficient. No disposal problems. Sold at drug stores and notion counters. Two sizes: Regular Tampax and Junior Tampax. Introductory package, 20¢. As much as 25% saved by purchasing large economy package of 40.

Accepted for advertising by the Journal of the American Medical Association.

TAMPAX INCORPORATED HY-109
New Brunswick, N. J.

Please send me in plain wrapper the new trial package of Tampax. I enclose 10¢ (stamps or silver) to cover cost of mailing. Size is checked below:

( ) REGULAR TAMPAX ( ) JUNIOR TAMPAX

Name_____

Address_____

City_____ State_____

Vagus Nerves

To the Editor:—What is the function of the vagus nerve and the purpose and result of severing it?

R. N., New York.

Answer.—There are two vagus nerves, the left and the right, which collectively are called the vagi. These nerves are more widely distributed than any other nerve in the body. Their branches extend from the throat or pharynx to the ascending portion of the colon. The sensory fibers in the vagi are concerned in regulating the depth and rate of respiration, the rate and force of the heart beat, and the blood pressure; in addition they carry nerve impulses responsible for nausea, vomiting and loss of appetite when the heart, stomach, intestines or gallbladder are disturbed. The motor fibers in the vagi control the activity of some of the muscles of the pharynx and larynx and of the musculature of the esophagus, stomach, small intestines, bronchi and bronchioles [branches of the bronchi]. When the fibers in the vagi going to the heart are mildly stimulated, the heart beats more slowly. The vagi also contain secretory fibers which are responsible for a secretion of gastric juice and, to a less extent, pancreatic juice when one sees, smells or tastes appetizing food.

There is no established indication for cutting either one or both of the vagus nerves. It is difficult to imagine a condition in which a surgeon would choose to cut even one of the vagus nerves in the neck, because to cut even one might lead to difficult respiration and would produce imperfect vocalization, due to a disturbance of the muscles of the larynx. And if cut high in the neck, it would cause a marked disturbance of swallowing.

The vagus nerves going to the stomach are rarely severed below the diaphragm, and this is done for a patient whose stomach manifests excessive motility with the hope that the motility will decrease. Occasionally the vagi have been cut below the diaphragm in a specially selected group of patients with gastric or duodenal (peptic) ulcer. In these patients the vagi are severed by the surgeon at the time he operates on the stomach for the ulcer. The operation is not generally practiced.

Physical Fitness Tests

To the Editor:—Can you tell me the value of the so-called physical fitness tests? Some of the physical educators are placing much reliance on these tests. In one school they were made part of the entrance examination, and I am not convinced that they are of sufficient value to be used in this way.

P. T., Illinois.

Answer.—The usual physical fitness test referred to is the one constructed by Dr. F. R. Rogers. In this test, a physical fitness rating is computed from the scores obtained by testing the strength of certain muscle groups and combining these strengths with lung capacity. The major assumption is that physical fitness and strength are directly related; that is, they will increase together or decrease together. In other words, to be physically fit means to be strong. This may be only partially true unless physical fitness is so defined.

In other words, these tests are rather physical *efficiency* or *accomplishment* tests and have to do more with muscular coordinations and skills than with the state of bodily health or "fitness."

In physical education, the test has a place as part of a general physical examination. A low physical fitness index may mean the individual is low in strength, and this fact may then be investigated by the examiner to locate the underlying causes.

One advantage in using the test is its tendency to encourage the instructor to adapt the physical education program to individual needs. Individuals have a great variety of needs which must be discovered through a variety of tests, and hence the instructor should not confine his examining procedure to one test alone. The physical fitness test has little relationship to a number of important factors which the competent physical educator must consider.

It is difficult to secure a true result from this test. Too much time is required to conduct a thorough test, and an individual, while being tested, often becomes so nervous that scientific conclusions cannot be drawn. Moreover, each individual's physical condition varies from day to day. Physical fitness tests might be useful for

classifying groups for special types of exercises. It is doubtful whether physical fitness tests should be made a part of an entrance examination, other than to be used for the purpose of determining how much, or how little, physical activity an individual should be allowed to indulge in. But one of the best tests of physical fitness lies in the individual's experience as to what he can do with comfort and happiness.

Any good system of physical education should increase the student's acquisition of muscular skills. This is the desirable thing, rather than the development of bulging muscles. By means of the physical accomplishment tests, the student may determine his own improvement from time to time or compare himself with others; or one class in a school gymnasium may be compared with another class as to progress in skills and coordinations.

If the school authorities make these tests as a part of the entrance examination and follow them up by future tests to determine how the individuals are progressing physically, the tests may seem worth while; otherwise they would be of little value.

"Painless Dentistry"

To the Editor:—Speaking as one who has sensitive teeth and a fear of the dentist's chair, I am eagerly awaiting the day when "Painless Dentistry" becomes painless. Not so long ago there was much ado over the discovery of Hartman's Solution. Is this effective? Why can't similar anesthetics be administered for the drilling of teeth as for their extraction?

W. K., Canal Zone.

Answer.—The pain associated with dental operative procedures, other than extractions wherein both general and local anesthesia are effective, can often be lessened by local applications of any one of a variety of drugs. The injection of local anesthetics may also be used successfully. In a great many cases sedatives prescribed by the dentist are helpful in allaying the apprehension of hypersensitive patients. It may be recognized, however, that anatomic and physiologic peculiarities of the teeth as well as pratical considerations sometimes make the attainment of satisfactory anesthesia difficult.

Fear of High Places

To the Editor:—I have always been somewhat apprehensive about going on the roof of even a small building or getting out to wash a window on the second or third floor but have managed to keep my fear under control. In the last few years my fears have become worse; I become uneasy when I have to ride on an "elevated" train, go up in an elevator or look out of a window of a tall building.

Will you please tell me (1) whether this apprehension is due to any physical or mental deficiency; (2) whether it is hereditary, and (3) what I can do to overcome or control it?

W. P., Illinois.

Answer.—The condition probably represents a type of so-called functional nervous disorder. It is not as a rule due to a physical disturbance and certainly not due to mental deficiency. It is definitely not hereditary.

These conditions are amenable to treatment when handled properly. The patient is usually advised to seek the help of the physician psychiatrist. Under proper treatment, this fear or phobia can be removed or managed so that it will not affect the ordinary activities.

Gallstones

To the Editor:—I have had gallstones for over three years and have been advised that x-ray treatments are being used with good success. Is this true?

H. K., Ohio.

Answer.—The x-rays are commonly used in the diagnosis of gallstones, but there is no evidence to indicate that they are of any benefit in the treatment of this condition. A surgical procedure usually is the only satisfactory method of relieving the patient of gallstones, and this should be undertaken if in the opinion of the physician the general condition of the patient is satisfactory. In cases in which gallstones are not producing symptoms, immediate removal of the gallbladder may be urged, but the patient should continue under the observation of his physician. Removal of gallstones as soon as diagnosed has been advised by many physicians as a prevention of damage to the liver, pancreas and other organs.

Is yours the 5th child

Surveys have disclosed the fact that one out of every five children in school needs eye care. Half of them will fail in their studies because they can't see the blackboard, or find it difficult to read comfortably. But they won't tell *you* about their troubles. They may not realize it themselves.

If you are in doubt about your child's vision, consult an eyesight specialist. His modern, scientific examination will tell you whether or not young eyes need help.

If glasses are found necessary, children will like "Skippy Glasses." They're as smart and as up to date as grown-ups'. And to reduce expensive repairs, they're strongly reenforced to "take" all the rough and tumble wear a husky young American can give them.

Made by American Optical Company, Southbridge, Mass., oldest and largest manufacturer of ophthalmic products.

Write for a copy of "Skippy's" entertaining "Book of Illusions."

New Freedom by Tre-Zúr

Today's most remarkable bra. Adjustable 3 separate ways — exclusive with the New Freedom. Bust support can be raised or lowered to suit you. At leading department and lingerie shops. Sizes Small, Medium, Large, and Extra Large, 32 to 44.

RECOMMENDED BY PHYSICIANS

Pamphlets on THE TEETH

THE CARE OF THE TEETH, by W. M. Gardner. Causes and prevention of dental decay and pyorrhea; dentifrices and mouth washes; brushing-with-pressure method; cooperation with dentist. 27 pages. **15 cents.**

OUR FOOD AND OUR TEETH, by Percy R. Howe. 4 pages. **5 cents.**

TAKING THE CHILD TO THE DENTIST, by William M. Gardner. 4 pages. **5 cents.**

DENTAL NOSTRUMS AND THE PUBLIC HEALTH, by Samuel M. Gordon and Eleanore B. Dufour. A reprint from *Hygeia* of three articles on the promotion of dental nostrums and dentifrices. 32 pages. **10 cents.**

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street Chicago, Illinois

ASTHMA
DUE TO BEDDING DUSTS

WHEN the doctor finds that asthma is caused by bedding dusts, **ALLERGEN-PROOF ENCASINGS** provide protection. Made of an impervious fabric, these dust-proof coverings for pillows and mattresses eliminate dusts which so often cause asthma, hay fever, vasomotor rhinitis and other allergic disturbances. Specially developed for us by **DUPONT. ALLERGEN-PROOF ENCASINGS** are recommended by physicians and sold direct to the user. Made to order. *Reasonably priced.*

AMERICAN MEDICAL ASSN. ACCEPTED COUNCIL ON PHYSICAL THERAPY

ALLERGEN-PROOF ENCASINGS, INC.
4046 Superior Ave. Cleveland, Ohio
80 John Street New York, N. Y.

Please send me, without cost or obligation, full information and descriptive literature.

NAME.....

ADDRESS.....

H-10

THE CRY FOR BLOOD (Continued from page 884)

medical examination. The content of hemoglobin—the oxygen-carrying substance in the red corpuscles—must be at least 85 per cent.

Donors are supplied with a booklet of instructions giving information as to their conduct, habits and general health. While on call they must notify the bureau when they leave their telephones. A penalty of three months' suspension is imposed for tardy arrival at a hospital. Every effort is made to safeguard the donor against too frequent donation of blood. Donors are paid at the rate of 87 per 100 cc. of blood. After a donor has submitted to a transfusion he must remain off the active list for a period of one week for every 100 cc. of blood given.

Although thousands of lives are saved yearly through blood transfusions, serious accidents—attributable chiefly to the introduction of incompatible blood—do occur. Errors in blood typing, due to faulty technic and incorrect interpretation, account for severe reactions. Fortunately, the majority of these are not serious. Of every thousand transfusions there may be one death attributed directly or indirectly to the transfusion. Blood typing preliminary to transfusion carries with it a definite sense of responsibility and can never be done too carefully.

"Blood banks," the latest transfusion development, operate on the principle of having pretested stocks of citrated and refrigerated blood obtainable at a moment's notice. The use of preserved blood is not new. During the World War, flasks of preserved blood played a significant role in emergency transfusions performed at military base hospitals. A decade ago, experimental papers published in the Soviet Union described the storing of cadaver blood which could be used in the resuscitation of living exsanguinated animals. One report told of a would-be suicide who had cut his wrists in such a way that he nearly bled to death. A corpse, just dead from an accident, was brought into the hospital. The doctor opened the cadaver, tapped a major blood vessel and injected its blood into the dying man. To the surprise of the onlookers, the patient recovered. Since then the preservation of cadaver blood has become an accepted Russian practice. During the Spanish civil war, transfusions with preserved blood were used to great advantage.

In the United States, one of the earliest blood banks, if not the first, began operation at the Cook County Hospital in Chicago on March 15, 1937. The essential idea of a blood bank is to keep a sufficient supply of blood of all types on hand. The functions of a blood bank are similar to those of the common variety of financial bank. Regardless of type, the amount of blood drawn from the bank can be paid back with an equal amount of blood. Each ward of the hospital deposits in advance blood taken from the patient's relatives or friends. Against this credit the wards may draw blood whenever required. As a result, precious hours are not lost while prospective donors journey over long city distances, and the willing donor is no longer rejected because of the incompatibility of his blood.

Before the blood bank inauguration, when transfusion was indicated, a patient's relatives and friends were notified for blood typing. Confusion often ensued. It was not uncommon for a half-dozen people or more to arrive in the hospital ward at the peak of some other activity. Sampling of blood to determine a compatible donor was a hit or miss affair. Each specimen had to be cross matched with the patient's cells and serum. The procedure was, if not time consuming, at least tedious. When the tests were adequate, a suitable donor could be selected; when inadequate, the work done on the unsatisfactory specimens was a total loss.

In the Cook County Hospital the technical equipment is amazingly simple. It consists of a reliable refrigerator, sterile glassware, some chemical solutions, tubing, needles, stoppers and citrate solution. The blood is drawn into a closed system composed of the needle, a rubber tube leading through a rubber stopper and the storage flask, containing the required amount of sodium citrate in saline solution. The flasks are dated and stored in a spacious refrigerator. At all times an effort is made to keep at least sixty pints of blood on hand, and at the end of sixty days all unused blood is dis-

carded. The ultimate decision as to the relative safety and effectiveness of preserved blood as compared to fresh blood is still in abeyance.

The blood bank suggests a lesson in applied democracy: There is something about the exchange of blood which accentuates belief in democratic processes. Most people are willing donors to members of their own family. But how do they react to the proposal that blood they give may go to a stranger? Who will get the blood? White man, black or yellow? Christian or Jew? Fortunately, the blood bank has great appeal to the popular imagination, and the vast majority of donors are undisturbed by the thought that another's child or another's uncle may receive their blood. There is an unusual spirit of cooperation and amiability in accepting the notion that we are all brothers-in-blood.

With serious dangers eliminated and transfusion technic simplified, it has been possible to treat a number of other grave medical conditions in addition to anemia and shock. The outstanding one, the one in which results are most constant and gratifying, is that of sudden hemorrhage. Here the transfusion is nothing short of life saving; but to be effective, it must be performed immediately. The time element is important. No person today lying in a well equipped modern hospital need die for want of blood, except, perhaps, those few instances in which the patient bleeds to death before transfusion can be instituted.

There has been a great deal of recent research in the field of immune transfusions. Recovery from most infectious diseases, such as measles, scarlet fever and chicken pox, occurs along with the development of antibodies, the inexplicable defense elements found in blood which are effective against specific germs. Antibodies in the blood persist for a long time, perhaps permanently. Hence, the transfusion of the blood of a donor recovering from, or long since recovered from these infectious diseases will often help another individual to throw off the same infection.

Not long ago, a husky 17 year old high school student skinned his knee in a tournament basketball game. In typical youthful carelessness the condition was ignored until a serious infection developed, and an operation became necessary. The postoperative course was stormy, and a blood culture was made. The organism was found to be a streptococcus viridans, a rare and deadly type of blood invader. Recoveries in these cases are few, and an immediate blood donor was not available. There were appeals through newspaper stories. Donors appeared, but none proved acceptable. A radio broadcast sent out a call, and eighty more volunteered and were turned down. Finally, from a neighboring state, in a small town more or less off the beaten track, a child was found who had recovered from this disease, and George Brown lived to toss another basketball.

This is only one of a number of cases in which this type of transfusion has proved its worth. And though the entire question of immune transfusion is still in its therapeutic adolescence, modern medicine does look forward to combatting successfully many stubborn and perplexing diseases—by giving life to one blood through that of another.

How Do I Look, Nurse?

★

When a woman is on the mend one of the first things she thinks of is—"How do I look?" A glance in a mirror either raises her spirits or makes her uncomfortably conscious that her hair looks untidy and her complexion neglected.

During this period of rehabilitation a thoughtful nurse is worth her weight in gold, for she can render innumerable little services which help to restore her patient's interest in herself.

A dainty bed-jacket, neatly placed pillows, artistically arranged flowers, fine cosmetics—all of these things go a long way towards bolstering up a woman's spirits during convalescence. . . . Intelligent cosmetic care helps to create a happy answer to—"How do I look?"

LUZIER'S, INC., MAKERS OF FINE COSMETICS & PERFUMES

KANSAS CITY, MO.

HELPING YOUR CHILD GET WELL (Continued from page 892)

people. A nurse is posted in the doorway of each ward to turn back the forbidden foods that will make both children and adults sick. But if they want to, clever and overindulgent parents can fool the nurse and arrive at the bedside with some chocolates, cakes and perhaps a pickle to be transferred to the child. This is obviously not a kindness, and the results are disastrous. As a matter of fact, except for the pleasure it gives parents and children, there is no need for these gifts of food. But with some thought, the extra food can be contributed in a fairly constructive way. Instead of a few pieces of cake or candy to be surreptitiously stuffed down the child, bring him a whole cake or a box of hard candies. These can be distributed among all the children at an appropriate time, and the nurse can control the amount eaten by each child so that no one need become ill. Gifts such as these will bring appreciation and praise for the child as well as for his thoughtful parents.

Toys play an important part in the child's life in the hospital. If it is allowed, the child will feel much less lonely if he is permitted to bring a favorite toy with him. Then during the convalescent stage, he will need toys to occupy his thoughts so that he will not mind the physical restrictions placed on him. Some hospitals have rules about the hours during which the child may have playthings, and others allow more freedom in this respect. In either case it will be important that each child has something appropriate. Thought must be given to the position of the child and the amount of motion allowed. Toys designed to make a noise; china and glass toys that can break and cut; tin toys that can also cut without being broken, and toys small enough to be swallowed should never be brought to the hospital. Neither should the children have expensive toys that must be cherished and respected, for they are too much of a burden on the patient and the nurses. Toys roll off the beds, and they are exchanged between the children; so no one should have to feel that a duty has been neglected when they are lost or when they disintegrate.

Dolls with dresses to be put on and taken off and paper dolls with dresses to be cut with dull scissors please girls, and sewing sets are nice for girls old enough not to lose the needle. Wooden trains and trucks, stamp collections and games such as horse racing appeal to boys. Soft animals which can be tied to the crib with a string are for the littlest children. Jigsaw puzzles and arts and craft things please older children. Picture books and old Christmas cards always entertain the young ones, while the older children like story books suited to their age and interests. Because the children do share their playthings, a toy for one child gives pleasure to many, and for the same reason the gift of one or two toys at a time is better than five or six. For no matter how careful you are to choose hardy toys, the casualties will be high, and new ones will frequently be required to replace old ones. Five, ten and twenty-five cent stores are the best places in which to find simple playthings that suit the purpose and that can be lost or broken without fear or worry.

When the time comes for visitors the children react according to their expectations. Some will wait with calm certainty that Mother and Father will arrive; some will get a letter telling that no one can visit them, so will content themselves with play, and others will longingly watch the door, never giving up hope until the hour is over. Then they will break into tears of disappointment. It is unfair to cause the child such anxiety. He should know when his family and friends can visit him, and when they cannot, a card will reassure him that he has not been forgotten. Although hospital visits are important, the other children in the family should not be neglected. If visiting hour comes at the same time as an important event in another child's life, forego the visiting and explain why to the patient. Otherwise, the other children may come to the conclusion that the only way to get attention in the family is to be sick.

No matter whether the child's parents have worried and cried about him at home, when they visit the hospital they must hide these feelings. Besides not being the time for self pity and worry, neither is it the time to try to worm out tales of mistreatment and starvation. Each child will have a lot to tell of quite a different nature, for each day will have had some excitement for him, and he will have stored it up to recount during the short visiting hour. There will be tales of trips to the x-ray room, of ice cream on Wednesdays, of a Mickey Mouse movie, a strange but good food, about the intern who plays the piano for them in the evenings, of sunbaths on the roof, of his bravery when his bandages were changed or when a blood test was taken, of the birthday celebrations of the child in the next bed, of the doings of the pretty young nurses and the pet name the doctor has for him. Then the child will want to hear of the news from home. The kind of news that will not bring on waves of homesickness but will let him know that home is still there and waiting to welcome him. After this exchange of news some mothers spend the rest of the hour reading aloud from a favorite book, and this makes the visiting hour an especially happy time. When the hour is up, the farewells should be quickly over. To linger and implore the child to "love Mother best" makes it too painful. It is best to walk away cheerfully and casually, with a promise to return at a stated time.

This sort of behavior in regard to admission and visiting will bring benefits to the parents and to the child. The hospital staff will feel more friendly and will talk more freely about the child's condition if they believe that they are dealing with parents who appreciate the hospital's problems and its methods. It will increase their already kindly attitude toward the child, as they will not have to associate him mentally with unpleasant parental squabbles. The child will be happier, more cooperative and less given to minor upsets and temper tantrums, all of which will aid in his recovery.

It is difficult to be always rational about anything so terrifying as a sick child. But overindulgence and sentimentality never cured an ailing child, while good medical and nursing care has saved thousands. Hospitals are friendly places, particularly in the children's wards. The nurses and interns are young but responsible persons who love children. They can be trusted.

WHO SHOULD NOT MARRY?

(Continued from page 874)

here again a shotgun prescription is unwise. You may be an exception. Get the advice of the best qualified person you can find, before you make a decision.

There appears to be some constitutional basis for epilepsy, but the influence of heredity is not large. The existence of an isolated case of epilepsy even among near relatives is ordinarily not a ground for avoiding marriage or parenthood.

In any case, "Be sure you're right, then go ahead." But be sure first.

3. Finally, many persons may marry providing they forego parenthood. This includes particularly those who come from families heavily loaded with serious mental disease; but there are also some grave physical conditions that may be passed on to the offspring through a "carrier" who does not himself show the condition but merely possesses the basis for it concealed in his germ-plasm.

In this category are otosclerosis or progressive deafness; hemophilia or "bleeding" due to lack of substances in the blood which produce normal clotting; harelip, and many others.

These are matters in which the help of a specialist is particularly necessary. Without special training, the person has no way of judging what his prospects are. Mr. L. came to consult about the possibility of marriage. His father and mother had both been deaf from childhood. Though his own hearing was normal, it seemed to him out of the question to have children; they could hardly avoid getting some of this family tendency. After a good deal of study of his background and that of his fiancée, he was assured that there was virtually no possibility that their prospective children would be handicapped. That verdict changed his whole outlook on life.

The serious, widespread mental diseases, dementia praecox or schizophrenia [marked by melancholia and self absorption] and the manic-depressive psychoses [alternating periods of high elation and great depression], clearly "run in families." Their presence in a family is the most serious kind of omen. Yet if one parent has insanity of such a type, it by no means follows that all the children are doomed to break down in the same way. Statistically, the percentage of offspring who will repeat the parent's symptoms may not be more than 10 to 30 per cent. But other children who do not actually break down may at least be peculiar or eccentric; presumably they have inherited some of the factors, but not all, that would cause a complete breakdown in average circumstances.

Looking at it from the other side, even though one parent is thus afflicted, part of his children may be quite normal and even unlikely to transmit any handicap in the future. Moreover, some of the elements of mental disease, taken singly, may be valuable; it is only when they get into wrong combinations that they make trouble.

To determine which of an affected person's children fall into the hopeful, which into the doubtful, class is of course the important task and one which cannot be tackled with any pretense of complete accuracy of prediction. In fact, complete accuracy of prediction is not a part of eugenics. *No one* knows in advance exactly what his own children will be like. Even in a superior family with a previously flawless record, a defective child may be born. It therefore becomes a matter of statistical, not individual, prediction. We can merely say that in one case it looks like a 10,000 to 1 gamble that the children will be perfectly normal; in another it looks as though the chance of defect is just as great as the chance of normality—it is "even money." Parents must decide for themselves how much risk they are willing to take, since *some* risk is inseparable from life.

Mrs. W. was married to a man whose father was in a state hospital suffering from dementia praecox. They had been advised for this reason to have no children, and she wanted to consult about adopting one. After a thorough investigation of the ancestry and of Mr. W.'s own makeup, it was disclosed that the chance a child of their own would turn out well was five times as great as the chance that a child whom they might adopt would turn out well, for these do not always grow up to be exactly what the foster parents expect!

Generally speaking again, the presence of serious mental disease in a family is a reason for going slow. If it exists in the families of both husband and wife, it is worth much more than double consideration. Snap judgment should never be made. But before giving up parenthood, get the best information to be had. Don't guess either for or against yourself in a matter of such importance.

Mr. B. had a younger brother who was an idiot. Naturally, he did not want to have children at all, if there was any likelihood that they would repeat that pattern. His fiancée was panicky when she learned about this boy, who was in an institution and of whom the family, naturally enough, did not talk much.

Even a casual survey of Mr. B.'s family showed it to be uniformly superior. The idiot son was merely an accident of birth; there was not the slightest likelihood that it represented an inheritable tendency in the family. The presence of a single low grade defective in an otherwise superior family is often a matter of no concern eugenically. Such defectives appear from time to time for reasons largely unknown in even the soundest stock. Something has gone wrong in the long, incredibly complicated process of development before birth.

Yet every one knows that mental defect in general does run in families. But it is the upper levels of mental deficiency, represented by the high grade imbeciles and the morons, who are the products of this inheritance in most instances. Offspring with the lower degrees of mental deficiency have parents of a higher average level of mentality than do those with higher degrees of inferior mentality, because the latter merely represent dull or feebleminded families running true to form; the former represent accidents in intelligent families.

Similarly, Miss F. had a sister who was a "mongolian imbecile," that striking type of defect which is apparently associated with abnormality of the thyroid gland and which produces a child with a vague resemblance to the Mongolian, or yellow, race. She worried greatly about her own possible

(Continued on page 913)

BOOKS ON HEALTH

Official Recreational Games and Sports

Individual Sports

Aquatics

National Section on Women's Athletics of the American Association for Health, Physical Education and Recreation. Price per booklet, 25 cents. New York: A. S. Barnes & Co., 1938.

These three booklets contain information for women on the respective titles indicated. Each booklet is sponsored by a special committee of the National Education Association consisting of teachers of physical education and recreation.

The booklet on recreational games and sports refers to badminton and the various track and field sports, giving rules and instructions for games, including many forms of ball games, hopscotch, bicycling, bowling, horseshoe pitching, as well as track and field events. There is a section on the selection and teaching of games for the physically and mentally handicapped.

The booklet on aquatics gives rules for various kinds of swimming meets and chapters on swimming technic, water safety, designs and care of swimming pools, water pageants, tables of swimming records and miscellaneous information of interest to those with a special bent toward aquatic sports.

The booklet on individual sports covers archery, tennis, riding and golf.

These pamphlets and others in the same series which are to come should be interesting to teachers and participants in the sports to which they refer. Their convenient pocket size and low price are a special recommendation.

W. W. Bauer, M.D.

Youth Tell Their Story

By Howard M. Bell. Price, $1.50. Pp. 273. Illustrated. Washington, D. C.: American Council on Education.

This volume is a pioneer attempt to find out what our young people are thinking about, how they feel about the problems that confront them and what their needs are. The method by which this information was secured was by direct contact with the young people themselves. For this study, 13,528 youths between the ages of 16 and 24 in the state of Maryland were interviewed by agents of the American Youth Commission. The sampling was so well controlled that it is believed that the study gives a good cross section not only of Maryland but of the 20 million youth of the nation as well.

Instead of finding the youth radical and rebellious against the standards of present day society the investigators found they are trying to adjust themselves to the social, educational and vocational realities of an era that is past. "Youth are trying somehow to find adequate satisfaction in such things as a secondary educational system that too often prepares them for colleges they will never enter, a system of vocational training that too frequently trains them for jobs they will never find, and colleges of 'liberal arts' that develop cultural tastes that quickly become atrophied in a chaotic society which denies the means of their satisfaction."

From this study ten specific needs of youth are found. One of them is stated as follows: "If we are to have happy and effective citizens, it is clear that a great deal of attention must be given to health education, including social and personal hygiene."

Any brief review of this important book is bound to be unsatisfactory. The book must be read. Certainly it is a volume that should be carefully digested by all those who wish to understand the American youth better.

J. Mace Andress, Ph.D.

Big Fleas Have Little Fleas

By Robert W. Hegner. Price, $3. Pp. 285. Illustrated. Baltimore: Williams & Wilkins Company, 1938.

As the reader approaches this volume he wonders whether it is humor or science, only to find that it is both. The author is a professor of protozoology in the School of Public Health of the Johns Hopkins University and writes with careful attention to scientific accuracy. He has had much experience in both the field and laboratory. Of special interest are the parts of the book dealing with the parasites that produce disease in man. Parodies, jingles, poems and humorous verses serve to complete the various chapters and sum up their contents in an entertaining fashion.

J. M. A.

Give Your Hair a Chance

By John W. King, B.S. Cloth. Price, $2. Pp. 157. Cambridge, Mass.: The Bradner Publishing Company, 1939.

This is a book that cannot be recommended, largely because of its confusion. It contains a considerable amount of correct information, but it is so mixed up with incorrect matter that the lay reader for whom it is intended cannot be expected to discriminate.

The author refers to hair substance circulating in the blood as a basis for the discredited idea that

By special permission of the Saturday Evening Post. Copyright 1939, Curtis Publishing Company.

"——And then one day the milkman brought you!"

bald individuals have extra heavy beards or heavy hair on their bodies because there is no hair on the scalp and that the hair substance circulating in the blood must have some place to be used up. This, of course, is a fallacy. While the hair, as well as all other tissues of the body, depends on the blood for its nutrition, the fact that certain cells in the body produce hair, while others have special functions of a different character, is a property of the cells, and it is not due to specific hair substances which circulate in the blood.

The relationship of diet to baldness or grayness of the hair is exaggerated. From this book one may conclude that baldness is due to wearing hats and that it is also due to not wearing hats. One may also arrive at the conclusion that sunlight is good for the hair and that sunlight is bad for the hair. The net result of reading this book will be to leave the reader more confused in the end than he was in the beginning.

W. W. B.

Safe and Healthy Living Series

By J. Mace Andress, Ph.D., I. H. Goldberger, M.D., and Marguerite P. Dolch. Chicago: Ginn & Co., 1939.

I Spick and Span. Price, 64 cents. Pp. 142.

II The Health Parade. Price, 72 cents. Pp. 168.

III Growing Big and Strong. Price, 76 cents. Pp. 236.

IV Safety Every Day. Price, 76 cents. Pp. 235.

By J. Mace Andress, Ph.D., I. H. Goldberger, M.D., and Grace T. Hallock, Chicago: Ginn & Co., 1939.

V Doing Your Best for Health. Price, 80 cents. Pp. 263.

VI Building Good Health. Price, 84 cents. Pp. 273.

VII The Healthy Home and Community. Price, 88 cents. Pp. 297.

VIII Helping the Body in Its Work. Price, 84 cents. Pp. 283.

This series of eight books is intended for the first eight grades. The titles give a general indication of the emphasis on each grade. The first book "Spick and Span" is concerned with the most elementary phases of health instruction, namely, cleanliness, neatness, colds, good things to eat, good teeth, eyes, nose and ears, and sleep. In Book II the instruction is developed on a slightly more advanced plane, introducing the questions of posture, dress, manners and habits from a slightly different angle. Book III begins to deal with growth, what you eat and what happens to it, teeth, elementary information about germs and more on safety and play. Book IV stresses safety in work and safety for the teeth, the eyes, ears, nose, lungs and skin. Subjects previously discussed are now handled from a new point of view.

The appeal to the fifth grade reader is appropriately more advanced and begins to give consideration to historical developments. The principal units in this book have to do with cleanliness, the best use of foods and "how they work" units on the eyes, ears, nose, bones and muscles, together with the hygiene of clothing and shoes and more emphasis on safety. The sixth book goes more extensively into the question of growth and introduces the cellular concept, proceeding then to deal with food and what happens to it, with teeth and the "how" units on how food and oxygen are carried through the body, units on growing bones and working muscles and on the nervous system. Early bedtime, helping the body to fight diseases and skill as the secret of safety are stressed.

Book VII emphasizes environmental factors such as shelter, heat, light, water, milk, drugs, communicable diseases, home safety and first aid. The interest of the child is caught by numerous examples related to his every day experiences and illustrated by interesting photographs and diagrams in the modern manner. Book VIII develops the exploration idea and emphasizes the structures of the human body and how it transports foods, oxygen and wastes, makes use of air and prepares food for use. Other units include how the body is governed, what its problems are, seeing and hearing, its outer covering, the teamwork of its bones and muscles and safety through the years. The entire series is notable for its attractivenss.

Each book has illustrations appropriate to the age. The illustrations in the body of the book are in each instance carefully adapted to the age and to the text. Many technics are used. In the later books of the series the photographs are distinctly modern in type and treatment.

The authenticity of the material in these books is, of course, assured by their authors. The educational approach is modern, constructive and progressive. The attractiveness of the books should insure their eager acceptance by children, and consequently their success.

W. W. B.

Always Be Safe

By Mary Jo McCracken. Paper. Price, 48 cents. Pp. 93. Illustrated. New York: The Macmillan Company, 1938.

Here is an interesting booklet that should give primary children a grasp of the essentials of street safety for children. It furnishes paper dolls for cutting and piecing together in safety situations, plus poems, songs and pictures to color. Teachers should find this a useful aid to safety instruction.

Sibyl Winser Johnston.

Stories for Parents

By Jean Schick Grossman. Four leaflets entitled "A Game of Jacks," "A Happy Day for the Whole Family," "A Promise" and "Dad Comes Home." Price, 5 cents each. Each 4 pages. New York: Child Study Association of America, 1938.

These four leaflets are the first in a projected series intended for use among groups of adults "whose limited educational background calls for a special approach." Each of the leaflets consists of four pages, of which the first is a title page, the second is used for simple illustrations with brief and elementary accompanying text, and the third page contains questions. On the fourth page the questions are answered, though not directly. As a basis for discussion with a trained discussion leader, these leaflets should be helpful. It is a little doubtful whether they could be used for distribution merely for reading by parents. They seem intended for and fitted for discussion aids.

W. W. B.

Psychological Factors in Marital Happiness

By Lewis M. Terman. Price, $4.50. Pp. 474. New York: McGraw-Hill Book Company, 1938.

What are the causes of unhappiness in marriage? The wide range of differences in the answers that have been put forth suggests that most people are just guessing. This uncertainty was such a challenge to psychologists that this author, a distinguished American psychologist, undertook an investigation based on the information supplied anonymously by 792 married couples. He undertook to compare the relative sex factors, personality factors and background factors on marital happiness scores.

The results of this study upset much popular opinion. The belief that sex plays the most important

part in marital happiness is not borne out. The data indicates that if all the sex factors are combined, they are far from being the one major determinant of success in marriage. Presence of children seems to have little effect on the general level of marital happiness. The influence of religious training is apparently nil. Among the most important background factors are superior happiness of parents, childhood happiness, lack of conflict with Mother and home discipline that was firm but not harsh.

This study must not be regarded as final, but it prepares the way to more elaborate studies. Certainly it behooves one not to be dogmatic about a field that is just being opened up for scientific exploration. J. M. A.

Safety Education in Industrial School Shops

By Dr. Lester K. Ade. Harrisburg, Pa.: Commonwealth of Pennsylvania Department of Public Instruction, 1938.

This pamphlet covers the problem of accidents in industrial school shops.

It reviews previous studies and presents tabulations of accidents which have occurred. Blanks used in reporting accidents in various school systems are reproduced, as are questionnaires which have been used in making studies. The principal causes of accidents would appear to be improper handling of tools and mechanical equipment, failure to carry out instructions, improper handling of material, hastiness, lack of attention and "horseplay." There are numerous excellent tables presenting the accident studies from various angles, such as distribution of accidents by months, distribution during the week, during the day, according to age and according to experience in shop work; the results are what might have been expected. A set of rules for a safety education program is set forth. W. W. B.

Fundamentals of Dentistry in Medicine and Public Health

By John Oppie McCall, D.D.S. Cloth. Price, $2.75. Pp. 161. New York: The Macmillan Company, 1938.

This is a well prepared and well illustrated book on the fundamentals of dentistry, which should be particularly useful to physicians and especially to public health officials, public health nurses, physicians connected with the schools and persons engaged in health education. It deals with the structure and the embryology of the teeth, with dental caries, diet, focal infections, dental disease and public health and dental care for special groups, such as school children and expectant mothers. The magnitude of the dental problem in America is well pictured in the concluding paragraph of the book, which paints a pessimistic picture, as follows:

> It has been estimated on the basis of figures available at the Guggenheim Dental Clinic, and on the life expectancy of the teeth as brought out in this and other clinic services, that the cost of dental care at clinic fees from 2 years to 60 would be $357.20, and this would result in the retention in a healthy condition of virtually the entire dentition to at least sixty years of age. For the person receiving little or no dental care in childhood and irregular care after that, it is estimated that the cost of this care (also at clinic rates) up to 60 years would be $811.10, and that that person would nevertheless lose all his teeth and be wearing full dentures by age 60.

The treatment of the subject of community dental programs is sketchy and inadequate as compared with the completeness and comprehensiveness of the rest of the book.

The book is noteworthy for its fine format. Printed on heavy, nonglare book paper, it is profusely illustrated with excellent drawings, photographs and photomicrographs and has a number of excellent tables of dietary requirements for adequate dental nutrition. There is a good index, an adequate glossary and a good bibliography. W. W. B.

Creative Ways for Children's Programs

By Josephine Murray and Effie G. Bathurst. Cloth. Price, $2.50. Pp. 396. New York: Silver Burdett & Co., 1938.

Who can forget the artificiality and the emotional strain of "speaking a piece" in the schools of a "bygone day." Children were drilled to recite selections which had little relation to their lives. Perhaps Father and Mother and the whole neighborhood were there. Every gesture had been planned and every intonation of the voice.

The authors of this helpful book realize that children's programs are a link between the school and the rest of the community and that they have educational possibilities never before realized. The writers have gathered their material from many sources and have presented varied activities. These newer programs deal with all sorts of activities, such as exhibits, talks, plays, operettas and creative activities for special days. Some of these units have to do with health, although it does not come in for its just share of attention. However, with this book as a guide any teacher could promote health interests. J. M. A.

Taking Care of the Family's Health

By Elma Rood, R.N., M.A., and Gertrude Lingham, P.H.N., M.A. 2 vols. Price in paper, $5, in flexible fibroid, $6.50. Pp., Book I, 269; Book II, 598. Tennessee: The Rural Press, Madison College, 1938.

This teaching guide for rural school classes is intended to give practical teaching help to persons in public health fields. It is prepared especially for adult and high school classes. The units in the book are grouped around "1. The Family in Health," "2. The Family in Illness" and "3. The Family in Public Health."

The authors are practical health educators who know what to do to satisfy the needs of teachers and students. Each unit is broken up into projects. Each of these projects considers some problem such as "Planning a Healthful Schedule," "The Selection of a Home" and "Planning Household Duties." The text is skilfully based on *doing* rather than mere *reading*. There are blank sheets for notes. The reviewer marvels at the ingenuity of the authors in presenting so clearly and definitely such a wide range of problems. It should be an excellent text for all teachers who wish to give courses on the health of the family. J. M. A.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the addresses where the publishers may be reached:

A. S. Barnes & Co., 67 W. 44th St., New York City.

Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore.

Bradner Publishing Company, Kendall Square, Cambridge, Mass.

Ginn & Co., 2301 Prairie Ave., Chicago.

The Macmillan Company, 60 Fifth Ave., New York City.

McGraw-Hill Book Company, 330 W. 42nd St., New York City.

Silver Burdett & Co., 41 Union Square W., New York City.

WHO SHOULD NOT MARRY? (Continued from page 939)

parenthood. The mongolian child, however, has little connection with heredity; it is usually produced as the youngest in a fairly large family, late in the reproductive life of the mother, and if the family is otherwise sound, the appearance of such a misfortune may be disregarded eugenically.

A eugenic conscience is highly desirable, but it should not be set on a hair trigger. No one has a makeup or family background in which all the traits are good, with none whatever undesirable. At least some are always more valuable than others.

A possible handicap should not always be allowed to outweigh a greater probable advantage. It is necessary to strike a balance.

Many a conscientious person foregoes parenthood on an extremely slight chance of handing on to posterity some more or less trivial defect which might well have been outweighed by the much greater certainty of passing along many and great superiorities.

Those who are counseling in this field agree that when they are consulted as to the desirability of parenthood on eugenic grounds, they usually find the inquirer's scruples to be excessive and parenthood to be recommended. This merely means that those who are intelligent and altruistic enough to be concerned in the matter are usually superior persons whose reproduction is socially and eugenically desirable.

Those who marry but must forego parenthood should compensate in some positive and constructive way, either by adopting children or by devoting part of their lives to other people's children—those of the community at large, perhaps. In this way they will have a much better emotional hygiene than if they were merely to sit down and brood over their frustration.

Those who do not marry at all are even more in need of such an emotional equivalent, since they are denied even the normal satisfactions of marriage, which, it is scarcely necessary to say, cannot be found outside of marriage. Dedication of one's life to some altruistic purpose has in every age been found to offer the best outlet for the personality, in which it can expand and function more or less normally instead of turning inward on itself.

[NOTE.—Next month Neil T. McDermott, M.D., discusses the manner in which complete marital harmony is effected in "Adjustments in Marriage."]

POOR VENTILATION AND RHEUMATISM

Poor ventilation and artificial heating of homes, combined with density of population, play a more important role than climatic factors in causing rheumatic troubles, catarrhal infections and decay of teeth, according to Sir Leonard Hill, M.D., who reports his observations in the *British Medical Journal*.

While the medical literature contains many speculations about the influence on rheumatism of cold and damp, cyclonic disturbances and the electrical state of the atmosphere, the author points out that the inhabitants of the cold and often foggy Arctic regions are among the healthiest persons in the world and rarely have rheumatic infections. He attributes this to their vigorous outdoor life.

The effects of crowded and insanitary living conditions are intensified by a diet in which the protective foods are deficient. Women suffer from rheumatic troubles more than men, because men change to better conditions when they go to work. The fear of cold intensifies the ill effects of the indoor environment.

UNSUSPECTED TUBERCULOSIS

Even persons who feel quite well and have satisfactorily passed a physical examination may be harboring tuberculosis infections, C. F. Baker, M.D., and W. J. Marquis, M.D., warn in a recent issue of *Radiology*.

The authors cite instances in which people have lost little or no time from work for years, and yet x-ray examination unexpectedly showed they had tuberculosis of one or both lungs. They suggest, therefore, that even supposedly healthy persons should be urged to submit occasionally to an x-ray examination of the lungs.

DENTISTS USE THIS BRUSH BECAUSE IT'S DESIGNED FOR BEST RESULTS!

Correct, modern massage-brushing is possible *only* if the toothbrush is a properly designed instrument to facilitate the prescribed technique. TAKAMINE does more than meet dental requirements for quality and design. For, *only* Takamine encourages frequent renewal by its practical low cost that makes it possible for everyone to change to a new sanitary brush at least once every month.

TAKAMINE

6 FOR 60c

TAKAMINE CORP.
132 Front Street, New York City
If your drug or toilet goods counter cannot supply you with Takamines, send 60c to us for INTRODUCTORY package of 6 Standard Takamine Toothbrushes.
Name.....
Address.....
SEND COUPON

Automobile Folding WHEEL CHAIRS

Chairs Made to Fit the Patient
CHROMIUM PLATED • WEIGHT 32 LBS.
WIDTH OPEN, 24 IN • CLOSED 9 IN
Write Today
EVEREST & JENNINGS
1032 NORTH ODGEN DRIVE, LOS ANGELES, CALIFORNIA

The SEX TECHNIQUE in MARRIAGE · By I. Hutton, M. D.

"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance."—*Dr. Morris Fishbein, Editor Journal American Medical Assn., in Hygeia.*

Acclaimed by the Medical Press Everywhere

Price $2 postfree. 5-Day Money-Back Guarantee.
Emerson Books, Inc., Dept. 922-A.
251 West 19th St., New York.

A Compilation of Books on Health

By a cooperative effort between the American Library Association and the American Medical Association a list of authentic books in the field of health has been prepared and classified according to many special topics. This list is to be published in three issues of *Hygeia*, and the second instalment appears below. When the publication is completed, the complete list as well as separate leaflets for some of the special subjects will be made available in pamphlet form.

PHYSICAL THERAPY

AMERICAN MEDICAL ASSOCIATION. *Handbook of physical therapy.* Third Ed. Price, $2. American Medical Association, 1939.

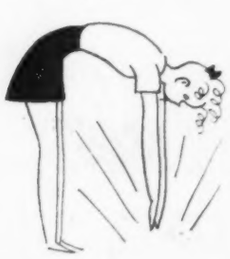
Covers the field of physical therapy as recognized in the United States, and the apparatus list is a useful index to apparatus which complies with rules adopted by the Council of Physical Therapy for the elimination of the undesirable.

KOVACS, RICHARD. *Nature, M.D.* Price, $2. D. Appleton-Century Company, Inc., 1934.

Nature's remedial forces, their uses, action, place in physical therapy, with their dangers when used by the untrained. Written for the layman in clear, nontechnical language.

MAYER, EDGAR. *The curative value of light.* Price, $1.50. D. Appleton-Century Company, Inc.

Facts about light therapy: what it can and cannot do. The author goes thoroughly into the subject of health lamps and describes apparatus, technic, dosage, dangers and benefits.



PHYSICAL EXERCISE

BODE, RUDOLF. *Expression-gymnastics.* Price, $2. A. S. Barnes & Co., 1931.

The theory and practice of a new type of gymnastic exercises developed in Germany.

GOULD, ADRIAN G., and DYE, JOSEPH A. *Exercise and its physiology.* Price, $3. A. S. Barnes & Co., 1932.

The modern knowledge of the subject which has resulted from the many studies made in this field during recent years.

OLDS, LLOYD W. *Track athletics and cross country.* Price, $2. A. S. Barnes & Co., 1930.

A brief manual that covers ordinary events of track athletics with chapters on training and psychologic effects of cross country running.

WHITE HOUSE CONFERENCE on child health and protection. Body mechanics: education and practice. Price, $1.50. D. Appleton-Century Company, Inc., 1932.

The relation of posture in children to general physical fitness. A welcome guide for medical men who deal with children, for teachers of physical education and for laymen in general.

WILLIAMS, JESSE F. *The principles of physical education.* Second Ed. Price, $3. W. B. Saunders Company, 1932.

The author approves and sets forth the natural program of physical education.

WILLIAMS, JESSE F., and NIXON, EUGENE W. *The athlete in the making.* Price, $2.50. W. B. Saunders Company, 1932.

Presents in simple, popular and nontechnical form the fundamental scientific principles which underlie proficiency in sports. Valuable for those interested in increasing their proficiency in their favorite sports and those engaged in the actual teaching and coaching.

WILLIAMS, JESSE F., and SCHWENDENER, NORMA. *Methods in physical education.* Price, $2.25. W. B. Saunders Company, 1932.

Devoted primarily to the applications of general educational method to the entire field of physical education. Practical suggestions are given for methods in the teaching of dancing, swimming, athletics, gymnastics and programs for young children.

PUBLIC HEALTH and HYGIENE

AMERICAN PUBLIC HEALTH ASSOCIATION. *Half century of public health.* Edited by Mazyck P. Ravenel. Price, $5.75. American Public Health Association, 1921.

A history of public health in the United States, containing nineteen chapters on various phases of public health by noted sanitarians.

AMERICAN PUBLIC HEALTH ASSOCIATION. *What to tell the public about health.* Second Ed. Price, $2. American Public Health Association, 1933.

This collection of brief articles presents in simple and impressive language many health facts that help prevent disease and promote health. A useful book for health officials.

BAUER, WILLIAM W., and HULL, THOMAS G. *Health education of the public; a practical manual of technic.* Price, $2.50. W. B. Saunders Company, 1937.

A handbook of adult health education, giving technic, media and sources of information.

BOLDUAN, CHARLES F., and BOLDUAN, N. W. *Public health and hygiene: a students' manual.* Rev. and Enl. Ed. Price, $2.75. W. B. Saunders Company, 1936.

The development and present state of public health and hygiene are here vividly described in well ordered and concise form. Community hygiene and health administration are considered, and health department rules and regulations outlined in regard to communicable diseases.

CHENOWETH, LAURENCE B., and MORRISON, WHITELAW R. *Community hygiene.* Price, $2.60. F. S. Crofts & Co., 1934.

A brief treatment of public hygiene planned for a college textbook.

GARDNER, MARY S. *Public health nursing.* Third Ed. Price, $3. The Macmillan Company, 1936.

An authoritative volume on the general subject of public health nursing.

HILLIARD, CURTIS M. *The prevention of disease in the community.* Price, $1.75. McGraw-Hill Book Company, 1931.

A brief but comprehensive survey of the factors concerned in the control of communicable diseases in the community.

HISCOCK, IRA V. *Community health organization.* Third Ed. Price, $2.50. Commonwealth Fund, Division of Publication, 1939.

A new edition of a valuable handbook for health workers and interested laymen.

LOYE, GRACE L. *The sanitarian and his duties.* Price, $2.50. Edwards Brothers, Inc., 1937.

Discusses the knowledge and abilities required of inspectors in the field of health and sanitation.

NEWSHOLME, SIR ARTHUR. *Medicine and the state.* Price, $3.50. Williams & Wilkins Company, 1932.

An important study of the relation between the private and official practice of medicine with special reference to public health and disease prevention. The volume is an interpretation of factual findings in Sir Arthur's survey of health work in eighteen European countries.

SALZMANN, JACOB A. *Principles and practice of public health dentistry.* Price, $4. Stratford Company, 1937.

A comprehensive history of dentistry and dental practice, private and public. Valuable as a reference book on the evolution of public health dental services, as well as dental practice in general.

SMILEY, DEAN F., and GOULD, ADRIAN G. *Community hygiene.* Rev. Ed. Price, $2.25. The Macmillan Company, 1935.

This book presents those facts concerning the promotion and safeguarding of public health which are an essential part of the mental equipment of every college man or woman.

STEEL, ERNEST W., and WHITE, ELLA G. *Hygiene of community, school and home.* Price, $2.25. Harper & Brothers, 1932.

Besides chapters on milk, water, plumbing, rodent control, insect control and food protection, the book also discusses the economics of health, the activities of health departments, legal aspects of public health work, child and maternity hygiene and the importance of light and ventilation with reference to health.

TURNER, CLAIR E. *Personal and community health.* Fifth Ed., Rev. and Enl. Price, $3. C. V. Mosby Company, 1939.

A book dealing with the health of the individual and with the health of the community. The treatment of personal hygiene presents the facts of healthful living and the scientific principles on which these health practices rest.

WINSLOW, CHARLES-EDWARD A., and ZIMAND, SAVEL. *Health under the "el"—the story of the Bellevue-Yorkville health demonstration in midtown New York.* Price, $2.25. Harper & Brothers, 1937.

More than a clear, readable description of a local demonstration; the authors also discuss general questions of public health administration which are of interest to leaders in health and social welfare everywhere.

FOOD and HEALTH

BALDWIN, MABEL E. *Diet and like it.* Price, $2.50. D. Appleton-Century Company, Inc., 1935.

A guide to pleasant and healthful dieting. This book is well adapted to the readers for which it was prepared, and dietitians will find it useful for reference.

BOGERT, L. JEAN, and PORTER, MAME T. *Dietetics simplified; the use of foods in health and disease; with laboratory section by Mame T. Porter.* Price, $3. The Macmillan Company, 1937.

A not overpopularized nor unnecessarily technical text, which will be helpful to the intelligent housewife, to a home nurse serving under a doctor's supervision and to students and dietitians. It gives rather detailed diets for diabetes, tuberculosis, gout and a few other diseases, as well as for normal conditions from infancy to old age. Diets at different cost levels and for racial groups are also included.

BUCKSTEIN, JACOB. *Eat and keep fit.* Price, $1. Emerson Books, Inc., 1938.

A brief manual on diet, its relation to health and weight control. Diet lists, charts and tables are given.

CHRISTIE, C. D.; BEAMS, A. J., and GERAGHTY, E. M. *Dietary suggestions.* Price, $1.50. American Medical Association, 1930.

Extensive diet lists and menus for patients afflicted with obesity, diabetes, constipation or gastric disturbances. The varied menus are planned for easy preparation by the average housewife, indicating the caloric and nutritive contents. Special consideration is given to the patient who must eat in restaurants and to other members of the patient's family.

COOPER, LENA F.; BARBER, EDITH M., and MITCHELL, HELEN S. *Nutrition in health and disease.* Sixth Ed. Price, $3. J. B. Lippincott Company, 1935.

A useful handbook for nurses and homemakers which treats the principles of nutrition and of cooking for the sick and convalescent. The presentation is shown in avoiding both oversimplification and excessive scientific precision.

FISHBEIN, MORRIS. *Your diet and your health.* Price, $2.50. McGraw-Hill Book Company, 1937.

The elementary principles of diet in normal and diseased conditions. Special systems of diet are debunked; appendixes contain charts, tables and reducing menus.

GRAVES, LULU G. *Foods in health and disease.* Price, $3.50. The Macmillan Company, 1932.

The production, marketing, care and preservation of food materials and their dietetic value described for "the nonprofessional house-wife, parent, business man or woman, progressive food producer and distributor, doctor, dietitian, nurse, and home economics worker."

HAMBIDGE, GOVE. *Your meals and your money.* Price, $1.50. McGraw-Hill Book Company, 1934.

A study of four planned diets ranging from bare subsistence to ample diet, estimating their cost and showing the relation of such diets to national well-being. Based on research done by Hazel K. Stiebeling.

McCOLLUM, ELMER V., and SIMMONDS, NINA. *The newer knowledge of nutrition.* Fifth Ed. Price, $4.50. The Macmillan Company, 1939.

Discusses the problem of an adequate, balanced diet in time of food shortage, applying knowledge gained through animal experimentation.

MALMBERG, CARL. *Diet and die.* Price, $1. Hillman-Curl, Inc., 1935.

Exposé of the many methods of weight reduction by diet and medicine which are advertised as safe and harmless.

MITCHELL, KATHERINE. *The deuce of reducing.* Price, $1.50. Covici-Friede, Inc., 1937.

ORR, SIR JOHN B. *Food, health, and income.* Price, $1. The Macmillan Company, 1937.

Interesting report of a study to determine the adequacy of diet of six groups classified by income.

PATTEE, ALIDA F. *Practical dietetics, with reference to diet in health and disease.* Twenty-first Ed. Price, $3. The Author, 445 Gramatan Ave., Mt. Vernon, N. Y., 1937.

A standard textbook for nurses, covering the principles of nutrition, the preparation of food both for the well and the sick and diets suitable to different diseases and conditions, including recipes.

PROUDFIT, FAIRFAX T. *Nutrition and diet therapy.* Sixth Ed. Price, $3. The Macmillan Company, 1934.

A textbook of dietetics. The subject matter is good, drawn from authentic sources and well presented.

SHERMAN, HENRY C. *Food and health.* Price, $2.50. The Macmillan Company, 1934.

Up-to-date, authoritative information to aid in the daily choice and use of food, emphasizing the goal of positive health.

THOMA, KATHERINE M. *Food in health and disease.* Price, $2.75. F. A. Davis Company, 1933.

Discusses the importance of the normal diet as part of the general health program and as the foundation for all diets. Student nurses and dietitians will find this a practical and helpful book.

VALUES in FOOD

BARBER, EDITH M. *What shall I eat?* Price, $2. The Macmillan Company, 1933.

Describes how one can enjoy good savory meals and maintain a high standard of health by eating the right kind of food attractively prepared.

BOGERT, L. JEAN. *Nutrition and physical fitness.* Second Ed. Price, $3. W. B. Saunders Company, 1935.

A textbook in nontechnical language treating of nutrition from the broader point of view, discussing the factors that have to do with digestion and assimilation rather than merely food itself.

BRIDGES, MILTON A. *Food and beverage analyses.* Price, $3.50. Lea & Febiger, 1935.

This book is of special value to physicians, dietitians and students of nutrition who want reliable and up-to-date data on the composition of foods and beverages.

BRONSON, BERNARD S. *Nutrition and food chemistry.* Price, $3.75. John Wiley and Sons, Inc., 1930.

Authoritative college textbook containing much up-to-date material not previously available and presenting the elements of nutrition and foods to a group of college students with little foundation in physiology and none in organic chemistry.

FURNAS, CLIFFORD C., and FURNAS, S. V. *Man, bread and destiny.* Price, $3. Reynal & Hitchcock, Inc., 1937.

The eating habits and needs of primitive and civilized man, with the effects they have had and may have on human history. The vitamins, minerals and other dietary necessities are discussed in detail; early suppositions and discoveries about nutrition are covered. Tables outline an adequate diet. A fresh slant on the importance of food.

GILLETT, LUCY H. *Food for health's sake.* (Nation health series.) Second Rev. Ed. Price, 35 cents. Funk & Wagnalls Company, 1935.

HOLMES, HARRY N. *Have you had your vitamins?* Price, $1. Farrar & Rinehart, Inc., 1938.

All about vitamins by a recognized authority.

McCOLLUM, ELMER V., and BECKER, JULIA E. *Food, nutrition and health.* Third Ed. Price, $1.50. The Authors, East End Post Station, Baltimore, Md., 1933.

A deservedly successful little book for the layman, now rewritten to bring its statements into line with the advance in our knowledge of nutrition and to present some of them in a way even better adapted to the needs of the ordinary person who wishes to understand how and why to choose an adequate, attractive and reasonably economical diet.

PFAFFMANN, MARY, and STERN, FRANCES. *Food and your body.* Price $2. M. Barrows & Co., 1932.

Although designed particularly for children of intermediate grade, the lessons contain unique and valuable suggestions and illustrative material for nutrition teaching at all age levels—in the clinic, in school or in the home.

PLIMMER, ROBERT H. A., and PLIMMER, MRS. VIOLET G. S. *Food, health, vitamins.* Eighth Ed. Price, $1.60. Longmans, Green & Co., 1939.

This small book is a summary in simple terms of the present knowledge about vitamins. It is pleasantly and clearly written.

ROSE, MARY SWARTZ. *Feeding the family.* Third Ed. Price, $5.50. The Macmillan Company, 1930.

"Thorough and absolutely reliable, practical and helpful to the whole family."

ROSE, MARY SWARTZ. *The foundations of nutrition.* Third Ed. Price, $3.50. The Macmillan Company, 1938.

The book has the merit of being written by an authority on nutrition. It is one of the best, and yet it is one of the simplest, expositions of the science of nutrition to be found in the English language.

ROSE, MARY SWARTZ. *Teaching nutrition to boys and girls.* Price $2. The Macmillan Company, 1932.

The author synthesizes the experience which she and her associates have gained from experimental teaching, hoping by so doing to provide a practical guide for other teachers, especially those in elementary schools who "wish to promote health through intelligent use of food." While the procedures suggested have been subjected to careful scientific checks, both they and the suggested lesson outlines have been reduced to clear and simple form.

SANSUM, WILLIAM D; HARE, ROBERT A., and BOWDEN, RUTH. *The normal diet and healthful living.* Price, $2. The Macmillan Company, 1936.

Contains discussions on the relation of nutrition to health, the properties of food substances and the processes of digestion. Emphasis is on the normal, and the treatment is simple and nontechnical.

SHERMAN, HENRY C. *Chemistry of food and nutrition.* Fifth Ed. Price, $3.25. The Macmillan Company, 1937.

The purpose is to present the principles of the chemistry of food and nutrition with special reference to the food requirements of man and the considerations which should underlie our judgment of the nutritive values of foods. Food is here considered chiefly in its relations to nutrition.

SHERMAN, HENRY C. *Food products.* Third Ed. Price, $3.25. The Macmillan Company, 1933.

Comprehensive. Particular emphasis given to the question of nutritive value. Discusses foods and food products in a practical manner, giving analyses, processes of manufacture and food legislation.

SURE, BARNETT. *The little things in life; the vitamins, hormones, and other minute essentials for health.* Price, $2.50. D. Appleton-Century Company, Inc., 1937.

In readable form, a comprehensive and authoritative survey of present day knowledge of nutrition.

TUBERCULOSIS

CORPER, H. J. *Founders of our knowledge of tuberculosis.* Price, 10 cents. American Medical Association, 1938.

A brief sketch of the outstanding leaders in the subject of tuberculosis.

HEISE, FREDERICK H. *1,000 questions and answers on T. B.* Price, 75 cents. National Tuberculosis Association, 1935.

A ready reference book for the tuberculous patient, his family and his friends.

KLEINSCHMIDT, HARRY E. *Tuberculosis.* (National health series.) Price, 35 cents. Funk & Wagnalls Company, 1936.

MYERS, JAY A. *The child and the tuberculosis problem.* Price, $3. Charles C. Thomas, 1932.

The public health and community aspects of the tuberculosis problem in relation to the child. Of interest to all concerned with child health and community health.

TRUDEAU, EDWARD L. *Autobiography.* New Ed. Price, $1. National Tuberculosis Association, 1928.

Dr. Trudeau wove into this book in simple, direct and fascinating style all the essential incidents and the experiences in his life-long fight against tuberculosis.

WEBB, GERALD B. *Tuberculosis.* Price, $2. Paul B. Hoeber, Inc., 1936.

Historical survey of tuberculosis. A valuable addition to the library of tuberculosis in that the facts are readily and entertainingly available to the general practitioner, the medical undergraduate and the interested laymen.

WEISMAN, SAMUEL A. *Your chest should be flat; the deep chest makes better soil for tuberculosis.* Price, $2. J. B. Lippincott Company, 1938.

A preventive measure against tuberculosis outlined by an assistant professor of medicine at the University of Minnesota, who is also a consulting staff member of two hospitals.

VENEREAL DISEASES

BECKER, SAMUEL W. *Ten million Americans have it.* Price, $1.35. J. B. Lippincott Company, 1937.

Discussion of the nature, symptoms, treatment and cure of syphilis, written in nontechnical terms for the layman.

FISHBEIN, MORRIS. *Syphilis, the next great plague to go.* Price, $1. David McKay Company, 1937.

Information for the layman on the cause, cure and prevalence of syphilis.

NELSON, NELS A., and CRAIN, GLADYS L. *Syphilis, gonorrhea and the public health.* Price, $3. The Macmillan Company, 1938.

The essential known facts concerning these diseases and their treatment are reviewed in detail as an introduction to a study of control programs, their development and experiences of the past and present with some suggestions for future programs. Intended for health officers, physicians, nurses, social and public health workers as well as the intelligent general reader.

PARRAN, THOMAS. *Shadow on the land; syphilis.* Price, $2. Reynal & Hitchcock, Inc., 1937.

The Surgeon General of the U. S. Public Health Service makes a survey of syphilis in this country and recommends methods for combating it. He is in command of the government's campaign against the disease.

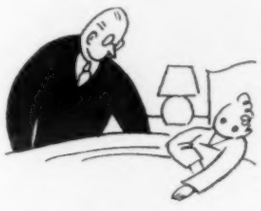
SNOW, WILLIAM F. *Venereal diseases; their medical, nursing, and community aspects.* (National health series.) Rev. Ed. Price, 35 cents. Funk & Wagnalls Company, 1937.

U. S. PUBLIC HEALTH SERVICE. *Diagnosis of syphilis by the general practitioner.* Price, 10 cents. Government printing office, 1938.

All public health workers would find this brief bulletin helpful.

WARREN, CARL. *On your guard.* Price, $1. Emerson Books, Inc., 1937.

A frank and informative discussion of the prevention and treatment of venereal diseases, addressed to average men and women as a challenge to a serious and widespread social evil.



SPECIFIC DISEASES

ARTHRITIS AND RHEUMATISM

BARKER, LEWELLYS F., and COLE, NORMAN B. *Rheumatism: with particular reference to arthritis.* Price $1.50. D. Appleton-Century Company, Inc., 1926.

Two physicians tell what the public ought to know about rheumatism. Describes the various maladies of the rheumatic group of diseases, how to recognize them and their prevention and treatment.

LAUTMAN, MAURICE F. *Arthritis and rheumatic disease.* Price, $2. McGraw-Hill Book Company, 1936.

A general consideration of arthritis, telling of its causes, symptoms, methods of treatment and prevention, by a consultant of the U. S. Public Health Service clinic.

MARGOLIS, HARRY M. *Conquering arthritis.* Price, $2.25. The Macmillan Company, 1931.

Written primarily for the arthritis patient. Describes the various kinds of arthritis and their treatment and preventive measures. Written in a clear and graceful manner especially for sufferers from arthritis and makes far better reading than most medical treatises.

CANCER

FORTUNE MAGAZINE. *Cancer, the Great Darkness.* By the editors of *Fortune.* Price, [illegible]. Doubleday, Doran & Co., Inc., 1937.

The symptoms, probable causes and methods of treatment of the different kinds of cancer, briefly described in nontechnical language. Introduction by Morris Fishbein. Intended for the layman.

TOBEY, JAMES A. *Cancer: what everyone should know about it.* Price, $3. Alfred A. Knopf, Inc., 1932.

The nature, history, type, location, diagnosis and treatment of cancer; its prevention and control, false cures. One chapter is devoted to famous persons who have had cancer.

WOOD, FRANCIS C. *Cancer.* (National health series) Second Ed. Price, 35 cents. Funk & Wagnalls Company, 1937.

COLDS

FORTUNE MAGAZINE. *Our common enemy—colds.* By the editors of *Fortune* in consultation with eminent physicians. Price, $1. Robert M. McBride & Co., 1934.

Sets forth the few known facts about colds. Ten chapters are devoted to an exposé of patent cold cures.

SMILLIE, WILSON G. *The common cold.* (National health series.) Price, 35 cents. Funk & Wagnalls Company, 1937.

U. S. PUBLIC HEALTH SERVICE. *Common colds.* (Pub. Health rep.: supp. 135.) Price, 5 cents. Government Printing Office, 1938.

DIABETES

JOSLIN, ELLIOTT P. *Diabetes, its control by the individual and the state.* Price, $1. Harvard University Press, 1931.

A useful volume on diabetes control for the layman.

LYONS, MRS. STELLA H. *A diabetic's own cook book.* Price, $2. A. A. Knopf, Inc., 1932.

Founded on the experiences of a diabetic this book is not only original but a distinct contribution to the books on the subject.

SCOTT, JAMES R. *Diabetes.* (National health series.) Second Ed. Price, 35 cents. Funk & Wagnalls Company, 1937.

SINDONI, ANTHONY M. *Diabetes; a modern manual.* Introduction by Morris Fishbein. Price, $2. McGraw-Hill Book Company, 1937.

Questions and answers concerning the nature of diabetes and its control with discussions of diabetic symptoms and complications, of the use of insulin and protamine insulin and of the diet for the diabetic. Suggested menus are included. Intended for use by the layman in conjunction with medical treatment.

GOITER

STEVENS, J. T. *The control of goiter; the thyroid in health and disease.* Price, $2.50. A. S. Barnes & Co., 1937.

The Chairman of the Advisory Board of the New York Goiter Committee discusses the prevention and cure of goiter for the layman.

HEART DISEASE

HART, THEODORE S. *Taking care of your heart.* (National health series.) Rev. Ed. Price, 35 cents. Funk & Wagnalls Company, 1937.

LEVIN, LOUIS. *Living along with heart disease.* Price, $1.50. The Macmillan Company, 1936.

A simple, lively and optimistic guide to a more intelligent understanding of heart disorders.

PARDEE, HAROLD E. B. *What you should know about heart disease.* Second Ed. Price, $1.50. Lea & Febiger, 1935.

Authoritative presentation of many of the aspects of diseases of the heart. Includes instructions for diet and diet lists. A simple and understandable manual for patients.

SMITH, SAMUEL C. *That heart of yours.* Price, $2. J. B. Lippincott Company, 1934.

Talks by a physician on the structure and function of the heart.

INDIGESTION

TIDMARSH, CLARENCE J. *Chronic indigestion; a layman's handbook.* Price, $1.50. Longmans, Green & Co., 1936.

An endeavor to clarify for the patient the facts of indigestion, especially peptic ulcer, in the hope that it may be of value to both the patient and doctor in attaining cooperation and mutual understanding.

INFANTILE PARALYSIS

U. S. PUBLIC HEALTH SERVICE. *Care during the recovery period of paralytic poliomyelitis.* (Bul. 242.) Price, 20 cents. Government Printing Office, 1938.

Deals with the epidemiology, prevention and immediate medical care of infantile paralysis.

INSOMNIA

MILLET, JOHN A. P. *Insomnia—Its causes and treatment.* Price, $1.75. Greenberg, Publisher, Inc., 1938.

By a distinguished New York physician and psychiatrist.

MALARIA

U. S. PUBLIC HEALTH SERVICE. *Malaria; lessons on its cause and prevention for use in schools.* Rev. Ed. Price, 10 cents. Government Printing Office, 1936.

NOTICE

The books that are mentioned in this list may not be purchased through HYGEIA or the American Medical Association, unless it is specifically stated that the book is published by this organization. Otherwise, your local bookseller can secure the book for you. In case of pamphlets printed by the federal government, these may be secured by writing directly to the respective department or bureau in Washington, D. C. No further address is necessary for the government publications.

WILLIAM I. FISHBEIN
considers the causes and corrections of two troublesome conditions of childhood.

The Children's Hospital, Cincinnati

POOR APPETITE and CONSTIPATION

IN children between 3 and 7 years of age, the refusal to take food, known as anorexia, or self-imposed starvation, is almost as common a condition as colds. There are many mistakes of management to account for this condition, all of which may be summarized in the one fact that the parents have permitted the taking of food to become an issue with the child. Among these mistakes are included unnecessary solicitude displayed by parents in regard to eating, faulty ideas concerning the amount of food the child needs to maintain normal nutrition and frequent unnecessary commands without insisting on their being obeyed. The condition often arises because the child has been persuaded or even forced to take food at a time when he did not wish to do so.

Anorexia often begins much earlier in life, in fact, toward the end of the first year. The disturbance may become so severe that the child vomits whenever he is forced to take food or even at the mere sight of a meal. If proper measures of management are employed at an early enough date, severe anorexia need never develop. This entails paying little attention to what the child eats and particularly avoiding mention of food or urging the youngster to take food when his appetite is temporarily poor. It is better to humor his inclinations at this time. If he prefers to take his food cold, he should be allowed to do so. The child's appetite is the best guide as to the amount of food he needs, and no attempt should be made to have him take more than this quantity.

The cure of a severe case of anorexia is not difficult, if parents can be made to realize the true nature of the situation. They must realize that there is nothing physically wrong with the child. It has been suggested that one of the quickest ways is to match the child's negativism by similar negativism—to increase the starvation which the child has imposed on himself. In other words, the child is not given food even when he wants it, and this is continued until the child really becomes hungry. Even then, he is not given the amount of food he might desire but is informed that the doctor does not believe that it is safe for him to take such a great quantity until later on. The employment of this measure in some instances has worked so well that children have even attempted to steal food, if they could not obtain it by other means. This is an effective plan, but most parents cannot be persuaded to carry it out fully because of their feeling that it may do the child some harm to be without the necessary amount of food for a few days. Hence, very few parents have the courage to continue it long enough to produce results.

Another method which may work equally as well is merely to place

the food before the child at each meal and then to forget about the matter of eating entirely. This, too, frequently fails because the parents cannot bring themselves to the point where they completely ignore the matter of eating and do not urge the child to hurry with the meal or to take more food. They often cannot even resist actually feeding the child.

If the cooperation of parents is not possible to secure, it may be necessary to send the child to a nursery school or to some other institution where he is surrounded by a number of healthy and hungry children. In such surroundings, the bad habit frequently vanishes in a few days' time. The treatment, however, must be continued for some months after a cure has been accomplished; otherwise, it quickly reappears after the child is returned to his former environment.

It is true that poor appetite does develop in the presence of illness as a result of lack of sunshine, fresh air and enough sleep and rest. Under such circumstances, the condition is temporary and quickly vanishes with improvement of the youngster's physical condition. Nevertheless, in all instances of poor appetite, a complete examination by the physician is the first step in treatment, so that physical abnormalities may be discovered and corrected. Food should be properly prepared and tastily served. The child should not be offered burned or undercooked food. They naturally will revolt against consuming unpalatable foods.

Appetite for certain varieties of food must be learned. Children may dislike various foods. There is a well known abhorrence for certain vegetables, particularly spinach. There is no need to force a child to take any food which he dislikes, as there is an easily available and satisfactory substitute. There is no one food, with the possible exception of milk, which is absolutely essential in the child's diet. With increasing age, these food dislikes often vanish, but most persons carry some of them over into adult life with no harm to themselves.

CONSTIPATION

Constipation has been considered a symptom of great importance and one which requires much attention. Perhaps when constipation really exists, it should be treated vigorously.

There is, however, a great difference between true constipation and the mere failure to empty the intestines as frequently as many parents consider necessary. Children vary a great deal insofar as frequency of intestinal action is concerned. Many infants who are entirely normal may have a bowel movement once every two or three days; others may have evacuations three or four times a day.

Parents are apt to be greatly alarmed unless a child has at least a daily evacuation; but the measures which they apply to secure this result are often more harmful than constipation might ever be. These measures not only may serve to produce irritation of the intestine, but not infrequently engender a negativistic state, which deliberately causes the child to avoid making the effort necessary to move the bowels. In the minds of some parents, the daily action of the bowels becomes an obsession. If no action occurs, it is considered a disaster. The child is urged to try again and again. With such management it is easy to understand that certain children welcome the opportunity to refuse, and they resist until severe constipation results.

Constipation of this type is easy to recognize. It is not corrected with laxatives, except when they are used to the extent of producing a severe diarrhea. Yet the condition is quickly changed when the child is placed in a different environment with a new nurse.

All infants, it is stated, have a tendency to constipation because of the position of the intestines, which are located chiefly in the lower part of the abdomen. A nursing infant may develop constipation because his food supply is insufficient or because it contains too much fat. Constipation may occur in bottle-fed babies who are receiving improper amounts of fat, sugar or protein in their milk mixture. The condition, in the latter cases, may be corrected by simple alterations in the diet. In the breast-fed baby, if there is insufficient food, a complemental feeding from the bottle may be utilized.

In children between 2 and 4 years of age, constipation may develop as a result of diseases which have decreased muscular vigor, such as rickets or malnutrition. Improper feeding and defective training may be contributory causes.

Constipation need not be considered important unless it has resulted in such symptoms as abdominal pain, distention of the abdomen, headaches and lack of energy. For these children, include in the diet fresh fruits, such as orange juice, and stewed fruits, particularly apples, prunes and figs. The giving of coarse cereals, such as whole wheat, and bulky vegetables, such as spinach, green beans and carrots, are aids in producing more frequent bowel movements. Certain sweets, particularly malt, honey and sirup may also act to overcome constipation. However, an excessive amount of sweets will upset the appetite and produce indigestion. Therefore, they must be used with discretion. The physician will outline specifically the diet which is suited for each individual child.

When the child receives insufficient fluids, the intestinal contents become dry and hard. Therefore, children who are constipated should be encouraged to drink three or four glassfuls of fluids daily.

Excessive milk drinking, overfeeding, hurried eating or irregular meals may help cause constipation and ought to be avoided. If the muscles of the abdomen are weak and sagging, a supporting belt is often of considerable value.

Proper training started early is a valuable preventive, but too much attention to bowel movements may produce negativism that will nullify all efforts made to form the proper habits. Exercise, since it strengthens the muscles, is to be encouraged. Laxatives should be employed only when the physician suggests them, and only the mildest ones need ever be used. Mineral oil, since

NEXT MONTH

Sleeplessness is a habit, which, like many others, is acquired and aided by the improper management of your child. Next month, Dr. William I. Fishbein instructs parents on how to avoid situations leading to insomnia

"LUX *is wonderful for the triplets' things"*

says Maryland mother

"Experience with my oldest, now 18 months, taught me how safe Lux is," says Mrs. G. E. Knapp. "The triplets have such tender skins I can use only the mildest of soaps on their things. Their little woolies are still soft and fluffy, thanks to Lux."

Careful mothers insist on Lux for all baby's things—it has no harmful alkali. The BIG box is extra thrifty.

ANYTHING SAFE IN WATER IS SAFE IN LUX

Tip NAIL POLISH **REMOVER** For Brittle or Cracked Nails

TIP contains no acetone or other harsh quick-drying solvents and does not dry out the oil in the nails. Just saturate a piece of cotton. This will do the nails of both hands as it won't evaporate.

★ *ASK YOUR DRUGGIST*

SUNBEAM CHEMICAL CO., MFR., CHICAGO, ILLINOIS

COSMETICS AND ALLIED PREPARATIONS

Facts concerning preparations for the skin and for the hair, deodorants, depilatories, etc., most of which have appeared in the Bureau of Investigation department of THE JOURNAL A. M. A. Miscellaneous articles by Dr. Arthur J. Cramp from HYGEIA. 60 pages. Price 15 cents.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street - Chicago, Ill.

NEW . . . a CREAM DEODORANT

which safely

STOPS *under-arm* PERSPIRATION

1. Does not harm dresses, does not irritate skin.
2. No waiting to dry. Can be used right after shaving.
3. Instantly checks perspiration 1 to 3 days. Removes odor from perspiration, keeps armpits dry.
4. A pure, white, greaseless, stainless vanishing cream.
5. Arrid has been awarded the Approval Seal of The American Institute of Laundering for being harmless to fabric.

39¢ a jar

Also in 10¢ and 59¢ jars

15 MILLION jars of Arrid have been sold . . . Try a jar today—at any store which sells toilet goods.

ARRID

it acts mechanically, is favored. Certain popular commercial products which act chemically, though mildly, are habit forming, and each usage encourages their further employment.

Careful training during infancy is the best way to assure regular action of the intestines in the older child. If the child is fed properly, little attention need be given to the action of the bowels. They will function as nature intended. Attempts to train the baby at too early an age are doomed to failure. Bowel training cannot be expected to be successful until the child is well past 9 months of age.

ADOPTED CHILDREN

Adopted children should be informed of their adoption as early as they are able to understand it, *The Journal* of the American Medical Association advises, pointing out that a good approach to this problem is "to tell them that whereas most of their friends had to be accepted, their foster parents picked them out and chose them from a group of children and liked them best."

This NURSING BRASSIERE
by MAIDEN FORM
gives Super SUPPORT
Ask for No. 7025
$1.50
Never a "let down" with this clever nursing brassiere—even when it is open for nursing! Each side unhooks separately—and the little band below the breasts plus a firm "centerpiece" keep you always well-supported. Complete with absorbent shields, holders for pads of sanitary gauze, adjustable shoulder straps and adjustable back fastening, you'll find it has your doctor's enthusiastic approval.
Send for free Foundation Style Booklet RX: Maiden Form Brassiere Co., Inc., New York, N.Y.
AT ALL LEADING STORES
Maiden Form
BRASSIERES
"There is a Maiden Form for Every Type of Figure"

WONDER STORIES OF THE HUMAN MACHINE

(Continued from page 931)

under a number of conditions, most of which have not been well understood until lately. There are still some puzzling problems in this field, but a few of them have been solved. We know that sunshine does something to the chemistry of the body that increases the probability of a normal deposit of lime in young bones. We have found that those active substances called vitamins are necessary in this process. These are largely problems of youth. But sometimes as age progresses, people commence to lose the lime salts from the bones, which then become soft and bend under the weight they carry. Such conditions may sometimes be corrected by a change of diet and living conditions, but often nothing seems to control it. In other cases the deposit of lime salts is excessive, and we have bones that are so brittle that they break from slight injuries, occasionally from nothing but ordinary muscular efforts. Such people have fracture after fracture. These usually heal promptly however. If this process is uncontrolled and persists, there results a more or less complete hardening of the body, and many or all the joints may become stiff or immobile. Such are the "ossified men" sometimes exhibited in shows.

The healing of the bones after breaking is a most wonderful process. If skilled attendance is at hand, x-ray pictures show the exact nature of the fracture, and usually careful splinting will retain the bone ends in position until healing takes place. In this case, nature glues the broken parts together, often using a lot more glue than we might think necessary. Not only are the broken surfaces well stuck, but a lot of material is wrapped around the bone ends, which soon hardens and holds the fractured ends firmly until new bone cells can form between the fragments and complete the repair. Then nature usually removes the excess glue, and after a few months it is difficult or impossible to tell where the fracture occurred. Much the same process is used in welding an automobile shaft. After the weld cools the excess metal is ground off. Sometimes this overgenerosity in material supplied causes trouble and interferes with motion when it does not disappear with the expected speed. Then it may have to be removed surgically. In nature, wild animals do not have the fine surgical care we usually get, and a broken leg will dangle for a time while the animal hops around as best it can. Then the broken part will cease to flop around and gradually the animal commences using it a little. In due time the leg is again strong and many times in excellent position. I have watched chickens with broken legs to see how the healing would come about. In a few days the leg became fixed, and shortly afterward the foot was put lightly on the ground. Then in an astonishingly short time complete function was restored. Sometimes there is a considerable deformity that interferes with motion, but rarely is the position so abnormal that an animal cannot get around.

Long ago I used to see some rather serious deformities from neglected fractures, men who had been far out on the frontier when the accident occurred and were unable to obtain help for several weeks. But now such a result is rarely seen, for prompt and skilful treatment will repair almost any bone injury. Bones can be spliced, lengthened, shortened and rebuilt in a most amazing way, almost as easily and successfully as cars can be repaired. Only one cannot call for and have new parts sent down from the stockroom. Fractures or suspected fractures, and this particularly includes "sprains," should at once be examined by an expert so that any permanent damage may be reduced to a minimum.

The framework of this human machine is a remarkable structure. The study is often regarded as uninteresting, and most people shy at it. But if we will take time to look it over even casually, we cannot but be impressed at its beauty and efficiency.

ANNUAL CONFERENCE

The National Society for the Prevention of Blindness will hold its annual conference from October 26 to 28 in New York City. Details of the conference are being arranged at the headquarters of the society at Rockefeller Center, 50 West 50th St., New York City.

Thumb-Sucking
PREVENTED THE NEW WAY
Simply apply BITE-X to thumbs or finger tips. It instantly forms a tough transparent coating unpalatable to taste. Also stops nail biting. Contains Aloin, 3.1%—Oleo Resin Capsicum, 1.5% in a collodion base. Approved by child specialists. Send for free booklet.
Satisfactory Results or Money Refunded
MAIL, $1.00 to Dept. 206
CHILD WELFARE GUILD, 386 4th Ave., N.Y.

Is Baby Overcovered?
SLEEP-RITE scientifically indicates UNDER-COVER temperatures. Tells when to ADD or REMOVE covers when it points to "SLEEP-RITE ZONE" Your baby sleeps tite. (Ordinary thermometers will not do) $1.50 at Baby Stores or by mail from SLEEP-RITE 911 FORD BLDG. DETROIT, MICH. Write for free booklet "BABY'S SLEEP"

EXPECTANT?
Consult your doctor regularly before and after baby comes. Ask him about easily cleaned Hygeia Nipples and wide-mouth Bottles. Patented inside ridge aids in preventing nipple collapse. Tab helps to keep nipple germ-free. Insist on Hygeia, the *safe* nursing bottle and nipple.
HYGEIA NURSING BOTTLE AND NIPPLE
SAFEST *because easiest to clean*
SEE YOUR DOCTOR REGULARLY

WEE WALKER Shoes
Just
WHAT THE DOCTOR ORDERED
All over America there are doctors who tell mothers to buy Wee Walkers, those CORRECT baby shoes which cost so little.
Don't let baby wear outgrown shoes. Baby feet grow so fast you *must* change to new shoes often.
Infants' Wear Dept. of the following low-profit stores. Birth to shoe size 8.
ACCEPTED
W. T. Grant Co. S. S. Kresge Co. J. J. Newberry Co.
H. L. Green Co., Inc. Sears, Roebuck and Co.
Metropolitan Chain Stores, Inc. G. R. Kinney Co.
Schulte-United Stores Isaac Silver & Bros.
Charles Stores F. & W. Grand Stores
A Pair Free to Interested Doctors: Simply write your request on your prescription blank or letterhead. Address Dept. H. Offer limited to U. S. A.
MORAN SHOE CO. • CARLYLE, ILL.
WEE WALKERS for the wee walker

MEDICINE IN THE NEWS

The new series of programs will dramatize significant medical news.

WENR, Chicago, is one of the stations which will feature these programs.

THE radio program, "Medicine in the News," sponsored by the American Medical Association and the National Broadcasting Company, will open November 2 at 4:30 p. m. Eastern Standard time instead of October 19, as originally announced. This postponement was made in order to clear time on the network for the annual forum of the New York *Herald-Tribune*.

Beginning November 2 and running approximately thirty weeks, the program closes June 20, 1940.

As previously announced, the program will concern itself largely with new developments in medicine. Medical news is not like many other types of news. A disaster, a war, a spectacular accident or a new invention develop suddenly and are of tremendous interest for a short time, and then they cease to be news. Not so with medical news. Medical news develops slowly, because every new discovery must be carefully tested before it can be released for widespread use. Medical news spreads more slowly than do other types of news. A case in point is smallpox vaccination which was first announced in 1798 and still appears to be news to some people. For this reason the topics of our program, "Medicine in the News," may not always deal wholly with something that just happened. They will not consist of telegraphic flashes direct from the laboratory. They will, however, deal with new, timely, interesting and valuable information direct from current medical publications. They will be presented in swift moving dramatic form with sound accompaniments and music. Each program will be complete in itself.

The general plan of the programs will be to open with a dramatic presentation of a current development in medicine with particular reference to its significance for the nonmedical listener. This will be followed by the "Medical High-Light of the Week," which will be a special feature related to the main topic of the program or of timely, seasonal interest if not directly related. At the end of each program there will be the "Health Question of the Week." This will be taken from HYGEIA's extensive correspondence or from among questions left at the exhibit of the American Medical Association at the New York World's Fair, the HYGEIA exhibit in the Incubator Building at the New York World's Fair or the American Medical Association exhibit at the Golden Gate International Exposition. The question will be asked one week, and the answer will be given the next week.

Listeners may send in questions, but these will be answered only if they do not involve diagnosis, treatment or any information which requires a personal knowledge of the condition of the patient.

Owing to the "spot" character of the programs, it will not be possible to announce topics in advance in HYGEIA. Local newspaper radio announcements should be watched for the title "Medicine in the News" or the name of the American Medical Association or for listings under such titles as "Health Program," "Medical News" and similar titles.

The program will be carried on the Blue network of the National Broadcasting Company. We have no means of knowing what stations are likely to carry the program from week to week. Evidence of interest in the community may influence local stations to carry the program.

New York Public Schools

Those who think that teaching is dull and monotonous have never experienced the thrill of real teaching.

ON OPTIMISM

By J. MACE ANDRESS

THE teacher today must try to be an optimist! Certainly this is no time to believe in sentimental Pollyanna philosophy. It is silly to believe with Alexander Pope that everything that *is* works out for the best. It is also futile to close our eyes and ears against reality. The world seems to be in chaos. The tragedy abroad is being reflected at home. There is the dark shadow of the millions of unemployed. Youth is being graduated but there seems to be insufficient work for skilled hands and brains. The constitutional liberties for which our ancestors fought and died are imperiled.

"How can the teacher be an optimist facing such incontrovertible facts, unless he plays a trick on himself?" No single teacher or group of teachers can make an immediate or spectacular change for the better in national or world affairs. But the schools do wield tremendous power. No matter what we teach, democracy as a way of living should never be neglected. Every teacher may do something to vitalize democracy as a practical way of living in the school.

There is one long view that we might take: The evolution of the physical world and the development of man from a tiny bit of protoplasm is a fascinating story. The march of time leaves us gasping from sheer wonder. Back of it all is the will to live, the unfolding of personality, beauty, kindliness and love. We need to get underneath the superficiality of appearances. For example, there was never a time in the memory of those now living when there was more hate abroad in the world and war seemed more imminent; yet who can remember when so many men ardently craved peace? In our hearts we must feel confident that peace will finally win. Reason, ethics and justice that arose from primitive ooze will ultimately rule.

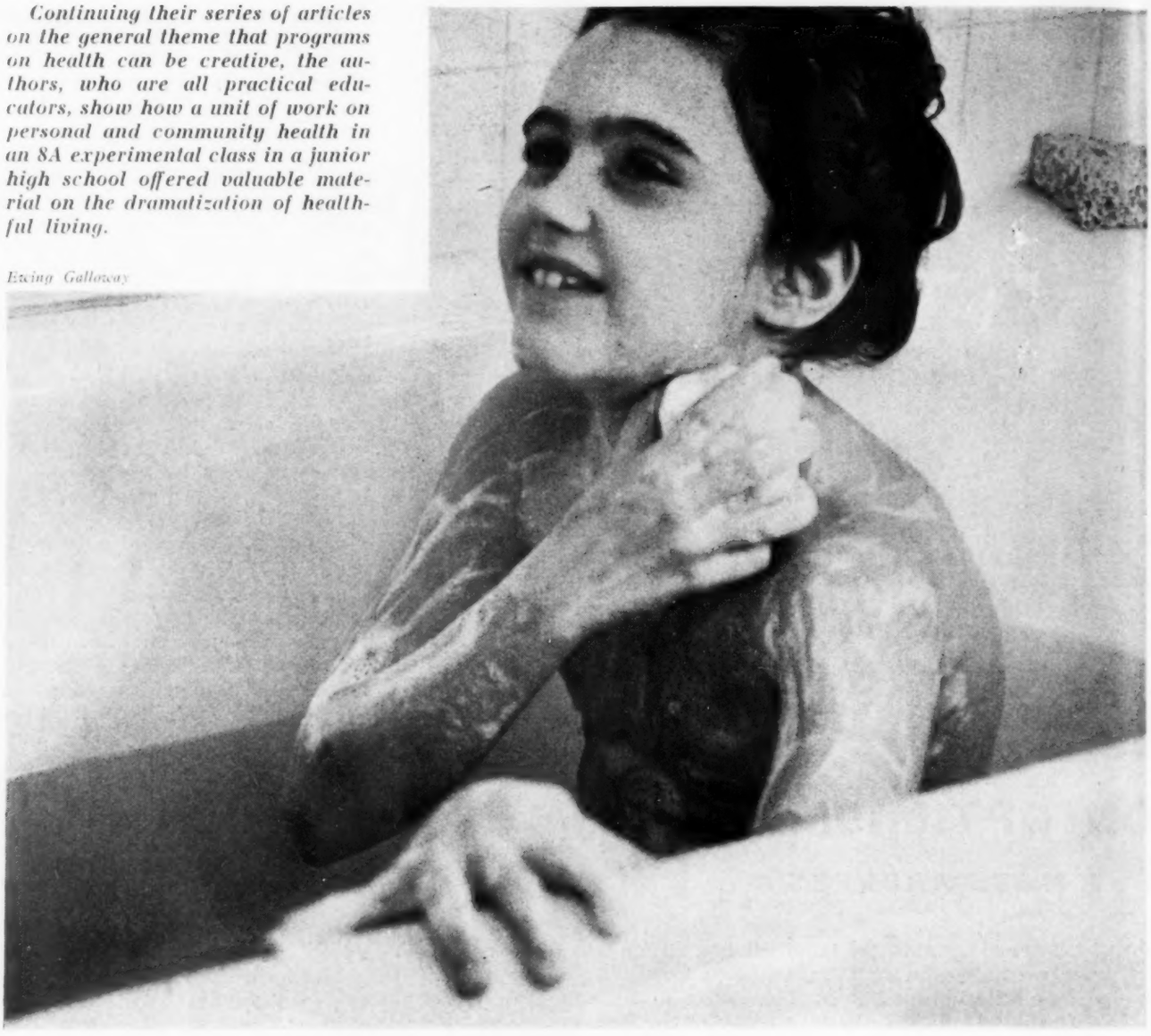
As Americans we may feel proud of our country in its adversity. Internal conflict has left its regrets and scars; but we are still sensitive to that idealism which has made America great. Who is not proud of our American youth? Jobless and somewhat disillusioned he has remained loyal to our most cherished ideals. Who can but believe that the hope, faith and courage so characteristic of American life from frontier days to the present will be equal to the task of facing the adversity of tomorrow?

Let us turn now to the teacher and his mission. Here I find the best reasons for optimism. This will not be true of all those who call themselves teachers. Let us be brutally frank. It will not apply to those who are not in a sense called to be teachers, to those who teach merely for money, meal tickets, long vacations and the gratification of a sense of power in ruling those inferior.

The personal growth of the teacher promotes optimism. Those who think that teaching is dull and monotonous have never experienced the thrill of real teaching. It is challenging. Every class has new faces and presents new problems. A good teacher always has a little of that divine discontent which craves a better mastery of material and more attractive and effective ways of presentation. This naturally leads to experimentation and endless study. Teaching is an adventure.

Life building lends itself to optimism. To have an influence in shaping the lives of others is a supreme satisfaction. Little children have a positive obsession to learn. Even before they can talk they begin to see, hear, taste, smell and touch. They explore their own bodies and the world within their immediate reach. With the development of language every child tries to broaden his knowledge about himself and his environment by discharging questions with the prodigality of a Gatling gun. As he learns to walk, his field of exploration is still further extended. Mental development leads him into speculation which extends his world to the distant stars. It is the opportunity of the teacher to guide this tremendous power, to open doors through which this energy can flow. These are the doors of health, art, literature, music, science and citizenship and all that is worthy in our civilization.

Continuing their series of articles on the general theme that programs on health can be creative, the authors, who are all practical educators, show how a unit of work on personal and community health in an 8A experimental class in a junior high school offered valuable material on the dramatization of healthful living.



Ewing Galloway

Creative Health Programs: II

By HELEN M. SMITH
EFFIE G. BATHURST
JOSEPHINE MURRAY

BOYS and girls of the upper elementary grades and the junior high school can discover for themselves the reasons for most health habits. Frequently, teacher and pupils organize their work in curriculum units. Out of these curriculum units children's creative programs grow.

A unit of work on personal and community health in a Santa Barbara junior high school, an 8A experimental class, is an example of a curriculum unit which afforded material for a dramatization about health. Although the unit was primarily on health, several subjects were incorporated; the teacher who supervised the unit taught English, social studies and science, and art was taught by a special teacher.

The unit started with the children's interest in the activities of another class the preceding semester. Great curiosity was aroused by the health stories, posters and pictures produced by this class. There was much talk about a speech on tuberculosis by a physician and two movies on immunization and the prevention of diseases. There was no difficulty in finding time for the study, because it was one of the units suggested for the regular curriculum.

Where to begin work was the big problem. What questions about health would be most interesting and helpful to study? There were many things the children wanted to know. For example:

What happens when you break a bone?

How does the heart work?

Why don't you get diphtheria after you have had "a shot"?

How can we prevent our teeth from decaying?

Why do we need to drink milk?

How can we improve the looks of our hair?

Do cosmetics harm the skin?

What kind of food will help one reduce?

Why don't they have quarantine laws for all diseases?

What keeps the city water pure?

Three Aspects of Health

The teacher suggested that there were three aspects of health that might be studied: (1) how to care for our own bodies, or personal health; (2) facilities for the improvement of community health, such as the water supply, garbage disposal, clinic service and the like, and (3) public health in the United States and the world.

After talking about the problems which could be included, the children decided that most of their questions were about their own bodies, and that it would be well, therefore, to begin with a study of personal health and follow later with study of community, public and world health. With the teacher's guidance they decided on a title for the study: The Conservation of Personal and Community Health. Then they made a rather ambitious list of objectives, also with the teacher's help:

To learn what our bodies are made of.

To find out how the parts function and why.

To discover to what extent the parts of the body are interdependent.

To learn how to take better care of our bodies.

To find out what we have to do to keep healthy.

To learn about the discoveries and inventions which make it possible for us to have better health and to read about the people who made these discoveries and inventions.

Some Important Problems

Further discussion of the possibilities of the study resulted in the formulation of four major problems as follows:

A. Personal health

How can we improve our health through an investigation of the structure, function and scientific care of our bodies?

B. Community health

What resources and agencies in our community contribute to and improve our health?

C. Public health in the United States and the world.

What are the major public health problems in the United States and in the world today, and how can we contribute to their solution?

D. Contributions of science to the improvement of health.

How have modern technics, methods and recent discoveries affected personal, community and public health in the United States and in the world?

In connection with their study of Problem A, personal health, the children formed seven committees, each of which studied one of the bodily systems for the purpose of answering the questions which arose from time to time and of finding a solution for the major problem. The preceding class donated their box of bibliography cards, so many references for research were right at hand. Before long, however, the committees virtually filled the box to overflowing with additional cards of their own. Among the materials read were magazine and newspaper articles, books, encyclopedias and bulletins. The children made graphs, charts and pictures, saw an excellent movie on health, had a panel discussion, gave individual and group reports and demonstrations and carried on experiments.

As the study proceeded, the following outline was developed, indicating some of the information and activities connected with the unit.

1. How are our bodies constructed, how do they function, and how can we take care of them and protect them?

   In connection with this problem the children studied the main systems of the body as follows: (a) the body framework, movement and covering; (b) digestive system; (c) circulatory system; (d) respiratory system; (e) excretory system; (f) sensory system; (g) nervous system.

2. What is the importance of food and proper diets to man?
3. How can we keep our bodies in "condition" through correct posture, exercise and rest?
4. What does hygiene mean? Mental hygiene? Bodily hygiene?
5. What are some of the diseases common to our body systems, and what can we do to prevent and cure them?

   The school doctor and a neighborhood physician spoke. Movies on tuberculosis and the house fly were shown. The children discussed common colds, tuberculosis, cancer, pneumonia, infections and contagious diseases. They read about the Curies, Robert Koch and Walter Reed and about the fight against malaria. Many in the class saw the movie about Louis Pasteur.

6. Who are some of the persons who have contributed to our health knowledge?
7. What are some of the most important rules for healthful living?

   An assembly program resulted, at which time some rules were given.

8. What does our school provide to aid healthful living?

   The class discussed the work of the school nurses, clinics, visiting nurses and considered the importance of physical examinations and physical education. The school nurse helped in the discussion.

Before the close of the unit, the children wanted to give a program to tell their parents about some of the things studied. To help them decide what kind of program to have, the teacher asked them to write replies to questions:

> What have you learned about your bodies and how to take care of them?
>
> What are you doing now in caring for your health that you were not doing before we began the unit?
>
> What would you tell your parents if they asked you for the most important facts you have learned?
>
> What are your suggestions for a program?

The replies were interesting. After discussing some of the answers, the class compiled a summary of the results mentioned and organized them in an outline corresponding with that which had been developed to guide the study.

Following are quotations from some of the replies:

> My main reason for wanting to study about the structure of the body was to learn more about bones. When you break a bone, what happens? And if a playmate breaks a bone, what is the best thing to do?
>
> Before we studied health I didn't care much about the care of my body, but now I can see the purpose of keeping it clean and of getting plenty of exercise, sunshine, lean meats, fresh fruits and vegetables and a warm bath or shower every day.
>
> Most of my interests in our study of health are to learn how cosmetics are used and why some girls have to use them.

The children were so enthusiastic about the things they had learned that they were particularly eager to present them in the most interesting and effective way. It was finally agreed to write a series of conversations and produce them in the form of a play. With a series of conversations, the group decided, it would not be necessary to work for plot and climax, and they could include a large amount of the useful information they had learned.

Interesting as the study had been throughout, the boys and girls were to find the program even more fascinating to develop. The next article in the series will tell how the children planned their conversations, secured the help of a doctor and a dentist for additional information and organized and wrote their dramatization.

The busy teacher who is usually handicapped by lack of library facilities for herself and her pupils must depend on health textbooks. There is a wide range of difference between those on the market; but their helpfulness in promoting healthful living depends largely on the way the teacher uses them. Miss Latimer, coordinator in health education for the Massachusetts Department of Public Health, in the second of her series of articles on Little Journeys Among the Elementary Schools, tells about the function of textbooks in some of the best teaching she has seen.

How to use the HEALTH TEXTBOOK

By JEAN V. LATIMER

Ewing Galloway

The health education textbook should be integrated with the general plan of the curriculum for each grade.

OBSERVATIONS concerning the modern use of the health education textbooks convince one how far the schools have gone from the old-fashioned method of reciting lessons page by page from books.

The progressive school health education movement was greatly influenced by the project-activity method which was beginning to be seen in the elementary schools of the 1920's.

The main emphasis on health behavior rather than on mere health knowledge did away with the assignment of so many pages from a textbook or the rote recitation of health lessons to the teacher.

Not a few years had passed, however, before health education specialists, superintendents and the teachers themselves realized that the activity method—while the center of the new health education curriculum—needed the reinforcement of the health education textbook and that without its use health teaching was likely to be fragmentary and sketchy.

The health education textbook therefore is rapidly becoming a source of information that is necessary and valuable for an intelligent comprehension of health problems. The modern health education text is filling this need, and there is increasing agreement with Maud Brown, one of the pioneers in the field, who wrote ten years ago in "Teaching Health in Fargo." "The textbook must be the keystone of any permanent plan of teaching any subject in the elementary public schools; the rare teacher who wishes to discard the text is not allowed to; and by and large it is a good thing that this is so, for

Acme

Classroom teachers now realize that children are not studying just health textbooks but the world outside, and the health textbook is a means of understanding it better.

it is easier to standardize authentic facts in textbooks than in teachers."

In my visits to schools I have found an increasing interest on the part both of administrators and teachers as to the importance of health education textbooks. Recently, a superintendent in a large industrial city told me he had just purchased a set of books for the entire elementary grades. "We are poor, and there are lots of cuts in the school budget, but I think we need to concentrate more on health teaching and do a better job. The field is new and unstandardized and not so well supervised. Therefore, we need good health textbooks all the more."

He also said he had not been so well pleased with some of the health teaching he had recently observed, that subject matter areas by grades were not so well organized. Without the guidance of a progressive set of health books, there is the tendency to repeat the same subject matter from grade to grade without broadening the basic conceptions on which health depends.

When I asked him how he had gone about selecting health education textbooks, he said that a group of his teachers who had been taking a university extension course in health education were appointed by him as a committee to make recommendations to him on the selection of suitable books. Under the guidance of the elementary supervisor they had presented a report to him which had led to the adoption of a series which he felt confident would raise the standard of health teaching.

This elementary supervisor told what she had looked for in the selection of such material. "First of all," she said, "I think we should ask how the health education textbooks integrate with the general plan of the curriculum for the elementary grades. We want our health books to be related to the general theme for each grade. In the textbooks which we selected we noticed particularly how this was true. For example, in the lower grades in the study of the home, school and community the health books run parallel with the social studies for the first three grades.

Schools and Camps

Has your child heart trouble, asthma, diabetes, nephritis?

He may lead a normal life, grow strong and learn in the sunshine at

La Loma Feliz
SANTA BARBARA, CALIFORNIA
Ina M. Richter, Med. Dir.
John A. Robinson, Senior Master.

Schools and Camps for Exceptional Children

● TROWBRIDGE TRAINING SCHOOL ●
Home school for nervous, backward children. "*Best in the West.*" Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

THE MARY E. POGUE SCHOOL for exceptional children. Individual instruction, speech correction. Separate buildings for boys, girls. Epileptics accepted. **G. H. Marquardt, medical director. W. H. Holmes, consultant. Gerard N. Krost, pediatrician. 80 Geneva Road, Wheaton, Ill.**

Beverly Farm, Inc. Home and school for nervous and backward children and adults. Successful, social and educational adjustments. Occupational therapy. Dept. for birth injury cases. Healthfully situated on 220-acre tract, 1 hr. from St. Louis. 7 well-equipped buildings, gymnasium. 41st year. Catalog. Groves Blake Smith, M.D., Supt., Box H, Godfrey, Ill.

WILSON SCHOOLS
Year 'round home school for exceptional children. Individual instruction. Only college trained teachers. Medical supervision. Beautiful buildings and grounds. **SPEECH CORRECTION.** Reasonable rates. An ethical school. 9 Arnold Place, Dayton, Ohio.

HEALTH PLAYS
Reprinted from HYGEIA

The School Lunch Room.—11 to 20 characters; time, 15 minutes. Set of 10 copies, 45 cents. Single copy, 10 cents.

The Medicine Men.—A puppet play. 7 characters; time, 10 minutes. Set of 7 copies, 30 cents. Single copy, 5 cents.

Sissy.—4 characters; time, 15 minutes. Set of 4 copies, 25 cents. Single copy, 10 cents.

The Gift a King Accepts.—15 characters. Set of 15 copies, $1.10. Single copies, 10 cents each.

The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

Send for free catalog describing other health material

HYGEIA
535 North Dearborn Street CHICAGO

In the middle grades special emphases are placed on food and shelter, which also fit in well with the social studies."

Another primary supervisor declared that in the selection of health readers in the first three grades she especially watched to see how the vocabularies used in the health readers checked with the standard word lists for each of these grades. "Unless they do check," she said, "we cannot integrate our health teaching with our general program."

In regard to the trends in health readers now coming out, she said, "Whereas, formerly they told fairy stories to interest the children in health they are now dealing more with the actual life situations of the children themselves."

In a small town school, the new school doctor looked over the prospective purchase of health education textbooks from the standpoint of the accuracy of the scientific facts presented.

I have been interested also to see how the health education books were actually used in the classroom. In a nutrition unit a fifth grade teacher had children consult the textbooks for reasons concerning proper food habits: for example, regularity of meals, taking time to chew food well and being pleasant and cheerful at meal time. She also had the class consult the textbooks to find out why one should be careful about eating such foods as sweet sirups, pickles and peppers in large quantities.

In teaching nutrition a fourth grade teacher had the children read in the health textbooks how vegetables were kept during the winter months. A sixth grade teacher, working on the same subject of nutrition, had the class consult the textbooks in order to check the accuracy of their facts as they made posters illustrating the various food classifications.

Some schools follow the plan of using the health books as a reference to the extent of having several types of health education textbooks in use in the same classroom.

Not long ago I was invited to a sixth grade class to see the activities on a unit on clothing in relation to health which was being developed by the pupils. During the time I was in this classroom there was a lively discussion as to whether or not one should wear rubber-soled shoes all day long. One boy thought that he had found some facts in the health education textbook he had been reading that seemed to show that a person should not do so. Another member of the class thought that according to what he had read, it was all right to do so. Under teacher guidance each textbook was consulted and was found to say practically the same thing, though in a different way.

Teaching children to use the health textbook in their study would seem to be one of the big tasks of the teacher. It is invaluable for summarizing accurately and precisely much of the basic information necessary for a real understanding of health.

The health book, as I see it, is now being used not as an approach to any topic, activity or health unit but is consulted as a reference in answer to questions rather than as a source of teaching.

One of the brightest spots in our program today is the fact that classroom teachers are realizing that children are not studying health textbooks but the world outside and that the health textbook is one means of helping to understand it.

REASONING—

Said Mrs. Rabbit to her sons,
"You shouldn't cry, my dears,
Because each morning you must wash
Your most enormous ears.
Although the task seems difficult,
There's cause for you to laugh:
Think how much neck you'd have to scrub,
If you were a giraffe."

By MARGUERITE GODE

TRADITIONAL EDUCATION

(Continued from page 916)

of us even today have not visualized schools which take this declaration seriously. We have been book-trained in our schools, and it is a slow and painful process to outgrow the covers of books and to imagine schools in which children are first given a chance to grow and flourish with full vitality. We have yet to understand that the best conditions for life, health and growth may be the best conditions for learning. It is easier, and it is traditional, to disregard the growth requirements of the child and simply place books before him and try to help him learn from them. Who has troubled, for example, to discover whether children in the elementary schools are harmed by the nervous excitement in a platoon school where the pupils change rooms and teachers every 30 minutes? Who knows whether children would both learn faster and grow better if an indoor program of sedentary activities were postponed until the age, say, of 9 years, instead of beginning at 6 or 7 years as is now common?

We have not yet imagined schools where all children are alert, unhampered by correctable defects, preventable illness, insanitary or unwholesome surroundings and ailing teachers. We have not yet imagined the kind of school program which will increase the vigor and vitality of the children instead of exposing them to hazards of infection, eyestrain, fatigue and emotional maladjustment. We have as yet only a faintly glimmering idea of the effect of such schools on the child's efficiency in learning.

If traditional-minded educators, thinking of the cultivation of the intellect as "the good for which all other goods are only means" [Hutchins], have ignored health education, is it partly because health educators themselves have failed to imagine how greatly all aspects of life could be enriched by the triumph of health over disease? We must realize that traditionalism in education is powerfully against a really effective health education program, although this traditionalism may be an unrecognized and unformulated, almost a subconscious attitude. Let us blow health education out of the doldrums with a strong breeze of steady, forward-thinking action.

Why Johnny "sassed" the teacher

1 JOHNNY WAS A "PROBLEM CHILD." Unruly in class, homework half done, bright but just wouldn't work. What was wrong? His teacher put two and two together, investigated Johnny's home life, found what she suspected: Johnny hated homework because he had no well-lighted place to study, and "took it out" on his teacher!

2 JOHNNY'S PARENTS were quick to see the light. "Sold" on good lighting themselves, they hadn't realized that the light on the dining room table where Johnny did his studying was far too dim for easy seeing without eyestrain. The teacher recommended a certified I.E.S. Better Sight lamp, and both she and the parents were amazed at the difference.

3 BUT GOOD LIGHT AT HOME is only half the battle. School lighting, too, can be improved, as witness this classroom at Van Wert High School, Van Wert, Ohio. Indirect luminaires with 500 watt Silvered Bowl MAZDA lamps proved adequate light for the whole class.

FOR I. E. S. TABLE LAMPS GARAGE AND LAUNDRY	100 WATT	15c
FOR LARGER I. E. S. LAMPS AND KITCHEN	150 WATT	20c
FOR I. E. S. 3 LIGHT LAMPS	100 - 200 300 WATT	60c
15, 25, 40, 60, 75 WATT		15c
G.E. also makes a line of lamps for . . . In 7½, 15, 30, and 60 watt sizes, marked GE		10c

4 G-E MAZDA LAMPS give more light for current consumed because they stay brighter longer.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Medical News

OF THE MONTH

Physical Fitness

Physical fitness and athletic efficiency are by no means the same thing, *The Journal* of the American Medical Association points out.

Fitness, it is suggested, may be defined as satisfactory adjustment to one's environment as used in the widest sense. Thus a man may be fit to climb a mountain and yet unfit for the strain of city life.

Concerning the superathlete, *The Journal* quotes the remarks of Adolphe Abrahams: "It is natural to desire to identify some factor which makes for supremacy; it is only to be expected, however, that any such search will be disappointing. After all, although the objective superiority on the track of the superman (the Olympic champion) over the generally accepted 'first-class' athlete is very striking, numerically considered it amounts to only perhaps 4 per cent. Such a difference, if depending on anatomical conformation making for better leverage, would be outside the range of accurate measurement; furthermore, the difference might be some tiny superiority in muscle chemistry or other biochemical factor.

"When all is said and done, it is a question of coordination of all the various factors working in harmony."

Relation of Diet to Night Accidents Questioned

The large number of traffic accidents at night has been widely attributed to night blindness, which is supposedly due to deficiency of vitamin A in the diet.

Recent experiments at the Detroit traffic clinic, however, tend to minimize the importance of these factors, Lowell S. Selling, M.D., reports in *The Journal* of the American Medical Association.

Dr. Selling states that his statistics "do not indicate that the vitamin A effect on glare vision can be demonstrated. Of forty subjects divided into those with adequate and those with inadequate diets we found that the average sensitivity to glare in the two groups was almost identical.

"This would imply that the lack of butter and rich foods in the diet which might supply vitamin A is perhaps not necessarily responsible for collisions at night and that vitamin A research may be less important in the problem of night blindness than was thought. Because of the better results in Negroes than in white persons, the amount of pigmentation in the retina is very likely of more importance.

Allergy Often to Blame for Colds

Allergy, not infection, is often to blame when one has repeated "colds," bronchitis, inflammation of the sinuses or any of several other ailments of the nose, ears and throat, George Piness, M.D., and Hyman Miller, M.D., declare in *The Journal* of the American Medical Association.

Diet Constituents Essential for Adequate Nutrition

"There are thirty-six known constituents of the diet which are essential for adequate nutrition," Tom D. Spies, M.D., Richard W. Vilter, M.D., and William F. Ashe, M.D., state in *The Journal* of the American Medical Association.

These constituents include all the vitamins, minerals, protein, fat and carbohydrate.

Eclampsia and Pregnancy

Women who have had eclampsia (a sudden attack of convulsions) during pregnancy are likely to have it again under similar circumstances. Such women, therefore, should not become pregnant again until at least a year has elapsed and then only after careful examination indicates that they can stand the strain involved, according to *The Journal* of the American Medical Association.

Bananas Are Good for Children

A child who is allowed to eat bananas—two or three of them a day—may show greater progress in growth than a youngster who is deprived of them, it is suggested by an experiment involving 277 boys and 48,000 bananas.

The investigators, Lydia J. Roberts, Ph.D., Ruth Blair, Gertrude Austin and Grace Steininger, supplemented the diet of 123 boys living in an institution with from two to three bananas daily, they report in the *Journal of Pediatrics*. The boys ranged from 8 to 16 years of age; a period of nine months was covered by the experiment. One hundred and fifty-four boys were denied bananas and used as controls.

On every basis of comparison the experimental boys had some advantage over the controls. They showed a slightly greater mean gain in weight and height than the controls; a larger percentage of them equaled or exceeded the gains "expected" during the period, and their mean percentage gain during the year was significantly greater. They made greater gains in measurements of arm and girth than did the boys deprived of bananas.

Although the differences in the two groups did not in most cases attain statistical significance, the authors believe that since the experiments were made on matched groups and are consistent in direction, they lend support to the belief that the differences are attributable to the banana supplement in the diet.

Arthritis and Poverty, Grief and Worry

Poverty, grief and worry appear to bear more than a chance relationship to the onset and flare-up of symptoms of rheumatoid arthritis, three investigators declare in *The Journal* of the American Medical Association.

Stanley Cobb, M.D., Walter Bauer, M.D., and Isabel Whiting, M.S., base this conclusion on a study of fifty patients with typical rheumatoid arthritis who were interviewed by a psychiatrist or a social worker. The condition, which involves inflammation of a joint and resembles rheumatism, is the most prevalent of the chronic joint diseases.